

THE UNIVERSITY OF HULL

Hope in Individuals living with Chronic Physical Illness:

**Correlates of Hope across Illness Populations and Predictors of Hope in
Individuals with Cardiovascular Disease**

Being a dissertation submitted in partial fulfilment of the requirements for the

Degree of Doctor of Clinical Psychology

In the University of Hull

By

Owen Forster BSc (Hons)

June 2012

Acknowledgements

I would like to begin by thanking all the individuals who were kind enough to give up their time to complete the questionnaire study. I extend extra gratitude to those who took part in the interview study. I wish that others can learn from them and their wonderful approach to their illnesses.

I would like to thank Dorothy Frizelle for her support through ever part of this process. She remained hopeful when I was not, and made sure I put plenty of ‘money in the bank’. Further thanks are extended to Eric Gardiner for his support with statistics and Sam Barlow, Sarah Harrison and all the other professionals who made this project possible. I would also like to thank the organisers of the various charities and support groups who were kind enough to allow me to talk to their members.

I would like to thank my friends and fellow trainees who over the past three years have kept me sane. Without them I do not think this would have been possible, or at least not as enjoyable.

To my family, I would like to say thank you for being the constant they always have been.

Finally, I would like to extend the deepest thanks to Steph, for being the person who made me smile after days of writing and stress. Words cannot do justice to how much you have helped me through this project and this course.

I would like to dedicate this project to all of my grandparents.

Overview

This portfolio thesis comprises of three parts: a systematic literature review, an empirical report and appendices.

Part one is a systematic literature review in which literature relating to the empirical paper is reviewed. Insufficient studies into hope in cardiac populations exist so the search was broadened to hope in chronic physical illness. The review attempts to determine what the strongest and most consistent correlated variables with hope are in chronic illness populations. Links to theory and recommendations for future research are then made.

Part two is an empirical paper which includes two complementary studies. Study one aimed to test the hypothesis, what are the statistical predictors of hope. A range of variables were assessed to allow regression analysis with hope as the predicted variable. Study two explored the experiences of individuals living with cardiovascular disease and what made them hopeful about the future. The results of the two studies were formulated together to propose an understanding of the predictive processes present in hope.

Part three comprises appendices and a reflective statement which draws on personal experience of and reflection on the research process.

Contents

Acknowledgements	2
Overview	3
List of Tables	7
List of Figures	8

Part One: Psychosocial Correlates of Hope in Individuals living with Chronic Physical Illness:

A systematic review of published literature

Abstract	10
Introduction	11
Methods	13
Results	17
Discussion	29
References	37

Part Two: Predictors of Hope in Individuals living with Cardiovascular Disease

Abstract	45
Introduction	46
Methods	49
Results	57
Discussion	63
References	71

Part Three: Appendices

Appendix 1	78
Guidelines for authors for the journal ‘Health Psychology Review’	
Appendix 2	82
Data extraction Form	
Appendix 3	83
Quality Assessment Checklist (adapted from Khan, Riet, Popay, Nixon and Kleijnen, 2001; National Institute for Health and Clinical Excellence: The Guideline Manual, 2007; Downs and Black, 1998, STROBE Initiative, 2008)	
Appendix 4	84
Inter-rater reliability	
Appendix 5	85
Hope measures employed by systematic literature review studies: characteristics, consistency and reliability	
Appendix 6	86
Quality Assessment of included studies	
Appendix 7	88
Guidelines for authors for the journal ‘Health Psychology’	
Appendix 8	93
Outline of positive psychology	
Appendix 9	94
List of forums/charities contacted for advertisement of Study 1	
Appendix 10	95
Online advertisement for Study 1	
Appendix 11	96
Ethical Approval Letter	

Appendix 12	97
Information sheet for Study 1	
Appendix 13	100
Consent form for Study 1	
Appendix 14	101
Internet survey questions converted to text format	
Appendix 15	102
Information sheet for Study 2	
Appendix 16	105
Consent form for Study 2	
Appendix 17	106
Interview schedule	
Appendix 18	109
Linear regression output	
Appendix 19	111
Worked example of Interpretive Phenomenological Analysis: Creation of themes	
Appendix 20	119
Reflective Statement	

List of Tables

Part One: Psychosocial Correlates of Hope in Individuals living with

Chronic Physical Illness:

A systematic review of published literature

Table 1.	Characteristics of included studies	24
----------	-------------------------------------	----

Part Two: Predictors of Hope in Individuals living with Cardiovascular Disease

Table I.	Questions from the semi-structured interview in Study 2.	55
Table II.	Summary of variable scale scores for Study 1.	58
Table III.	Pearson's r values for the relationship between hope and the predictor variables.	58
Table IV.	Multiple regression summary table showing effect of variables on hope (dependent variables)	59
Table V.	Super-ordinate themes and associated sub themes identified as predictors of hope	60

List of Figures

Part One: Psychosocial Correlates of Hope in Individuals living with Chronic

Physical Illness:

A systematic review of published literature

Figure 1.	Search Strategy	18
-----------	-----------------	----

PART ONE:

**Psychosocial Correlates of Hope in Individuals living with
Chronic Physical Illness:
A systematic review of published literature**

This paper was written in accordance with the guidance for authors for the journal
'Health Psychology Review' (Appendix 1)

Psychosocial Correlates of Hope in Individuals living with

Chronic Physical Illness:

A systematic literature review

Abstract

Purpose: Hope is associated with positive outcomes in chronic illness but despite this, it is often poorly defined with little understanding of what maintains and fosters hope.

Method: A systematic review assessing what psychosocial variables are correlated with hope in chronic illness populations was undertaken. Relevant publications were identified from a search strategy that encompassed 6 electronic databases, hand searches of 5 journals and reference lists of included articles. Results: 19 studies were eligible for inclusion. Significant correlations with hope were found for numerous psychosocial variables. The variables most consistently correlated with hope were low mood/depression, social support and anxiety. Inconsistent findings were found for quality of life, coping and spirituality. There was little to suggest that the methodology of the studies or the populations studied had a significant impact on the relationships observed. Conclusion: There are a number of variables that demonstrate consistently strong relationships with hope and these could be further developed into a predictive model of hope. Practically, interventions aimed at alleviating negatively correlated variables or promoting positively correlated variables of hope could be investigated with a view to improving health outcomes.

Introduction

Chronic illness is “by far the leading cause of mortality in the world, representing 63% of all deaths”, (World Health Organisation [WHO], 2012). In the UK alone, 60% of adults report having a chronic health problem, with Diabetes, Chronic Obstructive Pulmonary Disease (COPD) and Heart Disease amongst the most commonly reported health conditions (Department of Health [DOH], 2004). It is also estimated that these figures are due to more than double for some populations within the next 20 years (DOH, 2004). The financial implications for this are massive, with the NHS currently spending approximately 70% of the patient care budget on treating and managing those with chronic illness (College of Medicine, 2011). In addition, with the drive to save £20 billion by 2015 (DOH, 2011) it is now more vital than ever that new ways of helping people manage chronic illness are explored.

Salutogenic theory and practice posits that health exists on a continuum between total ill health and total health, and to move towards a position of greater health, the promotion of positive assets is equally important as alleviating disease (Antonovsky, 1979). The approach focuses on the resources that exist within individuals, groups and systems which promote and maintain health (Antonovsky, 1979). These have been termed General Resistance Resources (GRRs) and are wide ranging in their scope, from genetic to psychosocial e.g. coping, intelligence and social capital (Antonovsky, 1979). GRRs can be employed dynamically and repeatedly to assist in movement towards total health (Lindström & Eriksson, 2005). There is a limited, but growing, evidence base for the positive health outcomes that can result from successfully employing GRRs (Morgan & Ziglio, 2007). Sense of coherence, the ability to use these resources, is strongly related to resilience and positive subjective state of health (Eriksson & Lindström, 2006).

Additionally, sense of coherence has been associated with lower risk behaviour (Bartley, 2006), lower stress (Amirkahn & Greaves, 2003) and lower anxiety (Hart, Hittner & Paras, 1991). Over 20 different assets have been identified thus far and this review will focus upon one of those assets: hope.

Hope has been defined as "a multidimensional dynamic life force characterized by a confident yet uncertain expectation of achieving good, which, to the hoping person, is realistically possible and personally significant" (Dufault & Martocchio, 1985, p 382). A prominent theory in hope is Snyder's work on constituents of hope and these are pathway and agency thinking (Snyder, 2002). Pathway thinking is the steps one needs to take towards a desired outcome while agency thinking is the motivation and confidence an individual has to use their pathway (Snyder, 2002). Salutogenesis draws on a similar theory when looking at the asset of hope, that is learned hopefulness. Learned hopefulness theory describes hope as a process which involves individuals learning and utilizing skills that imbue a sense of empowerment (Zimmerman, 1990). This empowerment through hope is theorised to "limit the debilitating effects of problems in living" (Zimmerman, 1990, p 71). This theorised protective quality of hope has been found in a number of empirical papers. Higher levels of hope are correlated with lower severity and frequency of illness (Scioli, Chamberlin, Samor, Lapointe, Campbell & Macleod, 1997). In heart failure hope has been identified as a significant positive factor in illness trajectory (Davidson, Dracup, Phillips, Daly & Padilla, 2007), and has been found to be one of the most essential helpful elements identified in persons living with cancer (Buckley & Herth, 2004).

Despite the potential usefulness and positive impact of hope/hopefulness in chronic illness, hope is still poorly conceptualised, with little understanding of what maintains hope in those living with chronic illness (Wiles, Cott & Gibson, 2008). Hope is often viewed as elusive and mysterious, and little evidence has been found to aid in the fostering of hope, and by which more tangible means this could be achieved (Farran, Herth & Popovich, 1995). It is therefore important to try to understand what are the factors that are related to experiences of hope in people with chronic illness. If it is possible to clarify what factors are related to hope, then it may be possible to influence these with the intention of decreasing the individual, economic and societal burden of chronic illness. The aim of this review therefore is to systematically assess what are the significant psychosocial correlates of hope in chronic physical illness.

Method

Search Strategy

Relevant journal articles were identified following a comprehensive search procedure which involved electronic databases, hand searches of reference lists of identified articles and subject relevant journals. The database searches were carried out in December 2011. The following electronic databases were searched: MEDLINE, CINAHL, PsycInfo, Scopus, Web Of Science and the Cochrane Library. The following journals were hand searched for additional articles that may not have yet been added to electronic databases: Health Psychology, Psychooncology, British Journal of Health Psychology, Journal Of Clinical Psychology in Medical Settings and Oncology Nursing Forum.¹ The search strategy revolved around finding articles that focused on hope in

¹ The selected databases and journals were chosen to ensure that literature from medical, nursing and psychological disciplines were included as hope could be explored in any of these domains.

physical illnesses. As such the search terms were: (hope) AND (diseas* or ill* or heart or cancer* or neoplasm* or diabet* or arthriti* or cardiovasc* or renal or pulmonary or COPD or MS or "multiple sclerosis" or epileps* or hepatitis or AIDS or HIV or osteoporosis or colitis or crohn or lupus or pain) NOT (dement* or schizo* or autis* or degener*).² Illness search terms were chosen on the basis of being identified as the most common chronic health conditions globally (WHO, 2011). The terms following the Boolean operator NOT were included to exclude results that were focusing on mental or degenerative illnesses. Studies into mental illness were excluded as the focus of the review was on physical illness, and degenerative illness studies were excluded because hope has been found to be experienced differently in those with terminal disease, with the focus becoming present rather than future focused (Herth, 1990)

Selection Strategy

A systematic review allows for any consistent correlates to be identified, should there be any. As such, the initial inclusion criteria were broad to ensure the capture of all potentially relevant articles. Titles and abstracts were included and full papers reviewed if the study involved exploring the relationship between hope and another psychosocial variable and a quantitative methodology was employed, due to correlational analysis being required to fulfil the purpose of the review.³

All papers that met initial criteria were scrutinised and to be included in the review they needed to meet the following criteria: (1) the study was aimed at investigating a

² Terms were devised to ensure that the full range of physical illness was included in the search. Papers are often labelled with the illness term, rather than chronic illness, so it was necessary to include specific illness terms.

³ Quantitative methodology was chosen because the aim was to find consistent relationships, and to be able to compare between variables and populations so a standardised statistical approach was needed.

relationship between hope and other psychosocial variables; (2) the population was a patient one, not recovered individuals, carers, family or staff; (3) the population had a diagnosis of a physical illness; (4) the population was over the age of 18; (5) a quantitative methodology was employed; and (6) the articles were published in English.⁴ Papers were excluded if they: (1) were discussions and/or reviews; (2) employed measures of hope and other variables that were not psychometrically validated; (3) had populations with degenerative illnesses (e.g. dementia, Parkinson's etc.); (4) participants were receiving palliative care; or (5) did not report correlational analysis (Including *p* values).⁵

Review Strategy

A data extraction form was developed and applied to all articles that met the inclusion criteria. The information extracted from the articles was: population characteristics (age, gender, country, numbers, and diagnoses), study characteristics (design, hope measure employed, other psychosocial measures employed) and analysis (variables that did and did not correlate with hope).⁶

A quality assessment checklist of 15 items was devised based on a number of other quality checklists already in circulation (Khan, Riet, Popay, Nixon and Kleijnen, 2001; National Institute for Health and Clinical Excellence: The Guideline Manual, 2007;

⁴ Inclusion criteria 1, 2 3 & 5 were as a result of the aim of the review, criterion 4 was included because adult populations were of interest, criterion 6 was due to practical language issues

⁵ Exclusion criterion 1 was due to empirical research papers being required for the review. Criterion 2 was included to ensure that the variables being reported had been validated and found to be reliable. Criteria 3 and 4 are included because hope has been found to differ in terminal illness. Criterion 5 was included because the intended analysis required *p* values for comparison

⁶ See Appendix 2 for the data extraction form

Downs and Black, 1998, STROBE Initiative, 2008).⁷ This was necessary because the studies included were not of an experimental nature, but rather were cross-sectional in design and execution.⁸ This checklist was piloted on a small randomly selected number of articles (n=5), both by the author and another independent rater, and was found to be satisfactory, both in discrimination and inter-rater reliability, so was applied to all included articles⁹. This process was essential to limit bias as well as allowing meaningful comparisons and conclusions to be made (Higgins & Green, 2011). For each quality assessment indicator a score of 1 was assigned if it was achieved. The following aspects of each paper were scored: Does the study have appropriate and clearly focused questions/aims?; are the main outcomes mentioned in introduction or method sections?; is there a clear conceptualisation/definition of hope?; is the population representative and relevant?; is the proportion of those who agreed to take part included?; are population characteristics clearly described?; are there clear inclusion/exclusion criteria?; is the response rate reported?; are the staff and places/facilities of care representative of care as usual?; is the hope measure appropriate?; are the psychometric properties reported?; if reported are they valid and reliable?; are the main findings clearly described?; is the data relevant to the review?; are the limitations of the research acknowledged?. Scores were totalled to create a score between 0 (poor quality) and 15 (highest quality).

Procedure and data synthesis

Full manuscripts of studies that met the initial inclusion were acquired and each was closely examined to determine if they met inclusion criteria. A meta-analysis was not

⁷ See Appendix 3 for the quality checklist

⁸ The advantage of this was that the checklist was highly relevant to the studies included in the review. The disadvantage of this is that the checklist has not been validated, so could therefore be inaccurate

⁹ See Appendix 4 for inter-rater reliability scores

undertaken because the outcome measures employed were too heterogeneous to integrate statistically. For example, the most commonly investigated psychosocial variable (QoL) was only assessed in four of the included studies. Had there been more consistency in variables measured then a meta-analytic approach could have been employed.

Results

Trial Flow

The initial search strategy generated 2092 potentially relevant citations. Of these 2028 were omitted because they did not meet the initial inclusion criteria. The remaining 64 papers were scrutinised to determine if the full inclusion/exclusion criteria were met. Of these 64 papers, 19 met the full inclusion criteria and were subjected to data extraction and included in the review. Hand searching of references of the included 19 papers and relevant journals did not provide any additional papers for inclusion. Figure 1 shows the output of the search strategy and reasons for exclusion.

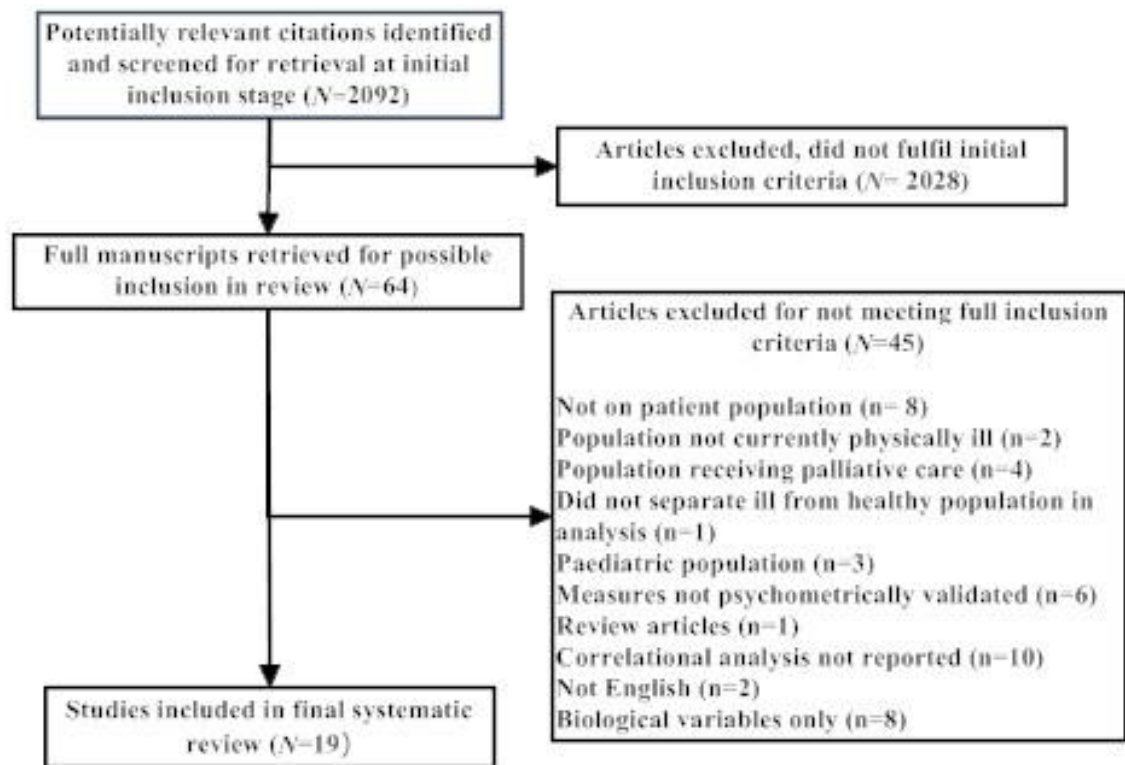


Figure 1: Search Strategy

Study characteristics

Demographic characteristics

A brief summary of included studies is shown in Table 1. Of the studies that reported participant age (N=15), mean age varied between 37 and 73 years (Alberto & Joyner, 2008; Billington, Simpson, Unwin, Bray, & Giles, 2008; Crothers, Tomter, & Garske, 2005; Fehring, Miller, & Shaw, 1997; Foote, Piazza, Holcombe, Paul, & Daffin, 1990; Frieson & Frieson, 1996; Gibson, 2003; Herth, 1989; Lin & Tsay, 2005; Parenteau, Gallant, Sarosiek, & McCallum, 2006; Post-White et al., 1996; Rustoen, Cooper, & Miaskowski, 2010; Staples & Jeffrey, 1997; Vellone, Rego, Galletti, & Cohen, 2006; Wang, Chang, Shih, Sun, & Jeng, 2006). One study did not include participant gender information (Hsu, Lu, Tsou, & Lin, 2003), and of the remaining studies 16 included both gender participants. Two studies included only female participants, although the participant population were female breast cancer patients. (Gibson, 2003; Zhang Jing,

Gao Wei, Wang Ping, & Wu Zhong-hui, 2010). Proportion of male participants varied from 9% to 82% in remaining studies. Proportionally, females comprised the majority of participants, with only five studies reporting a greater proportion of male participants (Billington et al., 2008; Frieson & Frieson, 1996; Post-White et al., 1996; Staples & Jeffrey, 1997; Zhang Jing et al., 2010). Ten studies were undertaken in the United States, five in Asia (Taiwan = 4, China = 1), three in Europe (Italy = 1, Norway = 1, UK = 1) and one in Canada. Generalizability may be limited due to bias towards female participants and most research being conducted in the United States. However, wide variability in participant age and research being conducted across three different continents increases confidence in generalising findings.

Design characteristics

Apart from one study, which was longitudinal (Parenteau et al., 2006), all studies employed a cross sectional design. Sample sizes varied from 10 to 194 (mean 86). Three studies had sample sizes under 30 (Gibson, 2003; Parenteau et al., 2006; Staples & Jeffrey, 1997). The lone longitudinal study had follow up points at 3 and 6 months after baseline measurements (Parenteau et al., 2006). Four studies included comparison groups, one split by underlying medical condition (Parenteau et al., 2006), one with spouses (Staples & Jeffrey, 1997), one with presence of pain symptoms (Chen, 2003) and one with African-American and European-American groups (Gibson, 2003). Despite having comparison groups, analysis was undertaken as a whole in all studies, apart from Staples & Jeffrey (1997) in which patient and spouse correlates were calculated separately.

Recruitment characteristics

All studies employed non-randomised convenience sampling and all recruited from either hospital or community health services which were reported to be representative of expected patient care. Ten of the 19 studies reported response rates (Alberto & Joyner, 2008; Billington et al., 2008; Chen, 2003; Foote et al., 1990; Lin & Tsay, 2005; Parenteau et al., 2006; Post-White et al., 1996; Staples & Jeffrey, 1997; Vellone et al., 2006; Zhang Jing et al., 2010) which ranged from 42% (Billington et al., 2008) to 95% (Lin & Tsay, 2005).

Illness Characteristics

Patient populations with a diagnosis of some form of cancer were studied in 63% of included studies. Two studies looked exclusively at breast cancer (Gibson, 2003; Zhang Jing et al., 2010) and one looked exclusively at lung cancer (Hsu et al., 2003). Two studies drew participants from a renal failure population (Billington et al., 2008; Foote et al., 1990) and a further two sampled populations that were suffering from heart related diseases (Staples & Jeffrey, 1997; Wang et al., 2006). The final three studies sampled different illness populations: multiple sclerosis (MS) (Foote et al., 1990), chronic obstructive pulmonary disease (COPD) (Alberto & Joyner, 2008) and gastroparesis¹⁰ (Parenteau et al., 2006).

Hope and Other Variable Measures

The Herth Hope Index was the most widely employed hope measure being used by 63% of papers. The Miller Hope Scale was used in three studies (Fehring et al., 1997; Foote

¹⁰ Partial paralysis of the stomach

et al., 1990; Frieson & Frieson, 1996) and a further three used the Herth Hope Scale (Felder, 2004; Herth, 1989; Post-White et al., 1996). The remaining three papers employed either the Snyder Trait Hope Scale (Billington et al., 2008), Snyder State Hope Scale (Parenteau et al., 2006) or the Nowotny Hope Scale (Vellone et al., 2006). All the hope measures employed have been demonstrated to have good reliability and validity.¹¹

A wide range of additional variables were measured, the joint most common being quality of life (QoL) with four studies either employing specific QoL measures or measures which had a QoL subscale within them (Billington et al., 2008; Post-White et al., 1996; Staples & Jeffrey, 1997; Vellone et al., 2006). Mood or depression was also measured by four papers, with three papers using a specific depression measure (Billington et al., 2008; Parenteau et al., 2006; Vellone et al., 2006), and one using a measure of affect balance which measures balance between positive and negative emotions, with a negative result indicating depressed or low mood (Crothers et al., 2005). Anxiety (Billington et al., 2008; Parenteau et al., 2006; Vellone et al., 2006), social support (Crothers et al., 2005; Foote et al., 1990)(Wang et al., 2006), spirituality (Fehring et al., 1997; Gibson, 2003; Post-White et al., 1996) and coping (Felder, 2004; Herth, 1989; Zhang Jing et al., 2010) were all investigated in three studies. Measures for self-care behaviour (Alberto & Joyner, 2008; Wang et al., 2006), self-esteem (Foote et al., 1990; Frieson & Frieson, 1996), sense of coherence (Gibson, 2003; Post-White et al., 1996), illness uncertainty (Hsu et al., 2003; Staples & Jeffrey, 1997) and psychological distress (Rustoen et al., 2010; Vellone et al., 2006) were included in two studies each. Single papers investigated the variables of optimism, perceived meaning of illness, religiosity and locus of control. At least one social variable such as

¹¹ See Appendix 5 for reliability and validity summaries of hope measures employed

socioeconomic status, marital status, education, years married or employment status were measured in 89% of studies. However, only two papers included any of these social variables in the correlational analysis (Lin & Tsay, 2005; Staples & Jeffrey, 1997) .

Quantitative Analysis

Pearson's correlation was employed by all the studies included in the review. This is deemed an appropriate statistical test to ascertain the relationship between two variables within the same population when they are sampled using cross-sectional methodology. It allows for statistical determination of a significant relationship between two variables as well as the strength of that relationship.

Quality assessment of the studies.

Appendix 6 provides an overview of the quality assessment for included studies, using the quality checklist described above. For each of the 15 indicators one point was awarded if met by the study giving a possible maximum quality score of 15. Five studies achieved the maximum quality score of 15 (Billington et al., 2008; Felder, 2004; Foote et al., 1990; Staples & Jeffrey, 1997; Vellone et al., 2006). The majority of studies (52%) scored between 14 and 12 on the quality assessment checklist. Three studies scored either 10 or 11 on the quality assessment checklist (Crothers et al., 2005; Fehring et al., 1997; Parenteau et al., 2006). One study (Hsu et al., 2003) scored 9 out of 15 on the checklist, which is the lowest score achieved by an included study. The main quality assessment items which were not met were reporting the proportion of people

approached who agreed to undertake the study ($n=11$), reporting the response rate ($n=7$) and reporting of sample inclusion or exclusion criteria ($n=6$).

Table 1: Characteristics of included studies

Study (first author, year)	Diagnosis	Sample size	Country	Hope Measure	Psychosocial Variables	r value	Quality Score
Alberto et al. (2008)	COPD	68	US	Herth Hope Index	Optimism	.59*	12
Billington et al. (2008)	Renal Failure	103	UK	Snyder Trait Hope Scale	Self Care	.39*	15
					Depression	-.51*	
					Anxiety	-.37*	
Chen (2003)	Cancer	91	Taiwan	Herth Hope Index	Opt.	.40*	13
					Perceived cancer meaning	-.33*	
Crothers et al. (2005)	Cancer	42	US	Herth Hope Index	Social Support	.42*	11
					Affect Balance	.73*	
Fehring et al. (1997)	Cancer	100	US	Miller Hope Scale	Education	.37*	10
					Religiosity	.58*	
Felder (2004)	Cancer	183	US	Herth Hope Scale	Spirituality	.64*	15
					Coping	.18*	
Foote et al. (1990)	Multiple Sclerosis	40	US	Miller Hope Scale	Self-esteem	.74*	15
					social support	.68*	
Frieson et al. (1996)	Renal Failure	35	US	Miller Hope Scale	Self-esteem	.36*	12
Gibson (2003)	Breast Cancer	10	US	Herth Hope Index	Sense of coherence	.18	12
					Spirituality	.56*	
Herth (1989)	Cancer	120	US	Herth Hope Scale	Coping	.80*	12

Study (first author, year)	Diagnosis	Sample size	Country	Hope Measure	Psychosocial Variables	r value	Quality Score
Hsu et al. (2003)	Lung Cancer	164	Taiwan	Herth Hope Index	Illness uncertainty	-.38*	9
Lin et al. (2005)	Cancer	124	Taiwan	Herth Hope Index	Locus of Control	.40*	14
Parenteau et al. (2006)	Gastroparesis	22	US	Snyder State Hope	Education	.21*	11
				Scale	Depression	-.73*	
				Herth Hope Scale	Spirituality	.07	
Post-White et al. (1996)	Cancer	32	US		Sense of Coherence	.67*	14
Rustoen et al. (2010)	Cancer	194	Norway	Herth Hope Index	QoL	.34	12
Staples et al. (1997)	Coronary Artery disease	21	Canada	Herth Hope Index	QoL	.11	15
Vellone et al. (2006)	Cancer	80	Italy	Nowotny Hope	Illness Uncertainty	-.49*	15
				Scale	Psych. Distress	-.56*	
					QoL	-.35*	
Wang et al. (2006)	Heart Failure	45	Taiwan	Herth Hope Index	Anxiety	-.50*	12
					Depression	-.58*	
Zhang et al. (2010)	Breast Cancer	159	China	Herth Hope Index	Self-Care	.34*	13
					Social Support	.52*	
					Coping	.09	

*denotes significance at the 0.05 level

Findings of the hope correlate studies

Unless otherwise stated all relationships reported are significant at the 0.05 level.

Strength of relationships

Only one measure in one study showed a very strong correlational relationship ($r = \geq 0.9$), which was a negative one between depression and hope at 6 month follow up in people with gastroparesis ($r = -0.90$) (Parenteau et al., 2006). Strong correlational relationships ($r = \geq 0.7$ to ≤ 0.89) were found in eight cases. Two of these relationships were of measures of mood/depression, with both studies finding that hope was inversely correlated to depressed mood (Crothers et al., 2005; Parenteau et al., 2006). Anxiety was negatively correlated with hope at both baseline and 6 month follow up in people with gastroparesis (Parenteau et al., 2006). In patients with cancer strong positive relationships were found between hope and coping response, spiritual wellbeing and existential wellbeing (Fehring et al., 1997; Herth, 1989). A strong positive correlation between hope and self-esteem in a MS population was also found (Foote et al., 1990).

A further 25 moderate strength correlations ($r = \geq 0.4$ to ≤ 0.69) were found. Three moderate positive correlations were found with reported social support received ($r = 0.42$ to 0.68) (Crothers et al., 2005; Foote et al., 1990; Wang et al., 2006). Three moderate negative relationships were found for measures of depression ($r = 0.51$ to -0.63) (Billington et al., 2008; Parenteau et al., 2006; Vellone et al., 2006). Moderate relationships with hope were reported for quality of life (Billington et al., 2008; Vellone et al., 2006), spirituality (Fehring et al., 1997; Gibson, 2003) and anxiety (Parenteau et al., 2006; Vellone et al., 2006). All of these relationships were in the same direction,

with hope being positively correlated with quality of life and spirituality and negatively correlated with anxiety. Other variables that had moderate positive correlations with hope were optimism, religiosity, locus of control and sense of coherence. Moderate strength negative correlations with hope were reported for illness uncertainty, perceived meaning of illness and psychological distress.

Consistency of relationships

As previously reported, the variable included in the majority of papers was quality of life. In two studies hope was positively correlated with QoL, although these relationships were mostly weak ($r = \leq 0.39$) (Billington et al., 2008; Vellone et al., 2006). However, two papers found no significant relationship between hope and QoL (Post-White et al., 1996; Staples & Jeffrey, 1997). This inconsistent finding is not due to illness type, as both significant and non-significant relationships were found in a cancer population. Relationships between hope and mood/depression were more consistent across studies. Of the four studies that included measures of mood all found significant negative relationships between mood and hope, with correlations all being of at least moderate strength. This finding was over a number of illness populations, including cancer, renal failure and gastroparesis.

Of the three papers that included an anxiety measure all found significant negative relationships with hope ($r = -0.37$ to -0.75). Consistent positive relationships were found across the three studies that included measures of social support, all of which were of moderate strength. Inconsistencies were observed in both coping and spirituality. All studies that investigated coping were in cancer populations, and within

these studies a strong relationship ($r = 0.80$ (Herth, 1989)), a weak relationship ($r = 0.18$, (Felder, 2004)) and a non-significant relationship (Zhang Jing et al., 2010) were observed. Spirituality showed a similar pattern, with a strong positive relationship ($r = 0.75$, (Fehring et al., 1997)), a moderate positive relationship ($r = 0.56$, (Gibson, 2003)) and a non-significant relationship ((Post-White et al., 1996) with hope being reported. Again, all these findings were from cancer populations.

Self-care, self-esteem and years in education were all positively correlated with hope across the two studies that measured each variable. Apart from one strong positive correlation between hope and self-esteem ($r = 0.74$, (Foote et al., 1990)), all other observed relationships were weakly positive ($r = 0.39$ to 0.21). Self-care and self-esteem were consistent between different illness populations, whereas both education correlations were observed in cancer populations. Consistent negative correlations were found for illness uncertainty and psychological distress, with r values between -0.30 and -0.56 . Both psychological distress correlations were found in cancer populations while illness uncertainty was consistent across cancer and coronary artery disease populations. An inconsistent finding for sense of coherence was found across studies, with a moderate correlation found in one paper ($r = 0.67$, (Post-White et al., 1996)) and a non-significant relationship found in another (Gibson, 2003). Both of these papers were investigating cancer populations, although the non-significant relationship was observed in a study which looked exclusively at a breast cancer population.

Optimism was found to be positively correlated to hope ($r = 0.59$ (Alberto & Joyner, 2008)) as was religiosity ($r = 0.58$, (Fehring et al., 1997)) and locus of control ($r = 0.40$, (Lin & Tsay, 2005)). The Perceived Meaning of Cancer Inventory employed in one

study produced a number of subscales, which produced varying correlations from positive (Challenge subscale, $r = 0.44$) to negative (Threat subscale, $r = -0.40$) (Chen, 2003). The only psychosocial variable found to have no relationship with hope was years married (Staples & Jeffrey, 1997).

Discussion

The most consistent and powerful negative correlations with hope was low mood/depression. Not only were all observed relationships from included studies in the same direction, they were also of at least moderate strength and consistent across a number of illness populations. From this it seems reasonable to postulate that low mood/depression and hope are likely to be negatively correlated across other chronic physical illness populations. It may be that depression inhibits experiences of hope and/or that hope is protective against low mood. For example, rumination whilst depressed could prevent forward thinking, or looking at the positives could attenuate the effects of negative thinking biases. The three papers that analysed the relationship between social support and hope found a similar consistent picture, again observing same direction relationships over a number of illness populations (heart failure, Cancer and MS). The same is true of the three studies which looked at anxiety and hope, with unidirectional relationships found across three different illness populations (Gastroparesis, Renal Failure and Cancer). Social support and anxiety findings are not as robust as low mood/depression correlations due to two main reasons: observed relationships were not as strong and there were fewer papers investigating the constructs with fewer participants. Anxiety and social support do appear to be reliable correlates of hope, with anxiety being a more robust finding due to higher participant numbers and slightly stronger observed relationships.

While other consistent correlations were shown in the review they lacked the strength and applicability of those mentioned above. These consistencies were produced from two studies per variable. It is possible to hypothesise that the variables that showed consistent relationships could be significant correlates of hope, but due to the paucity of literature the strength of this hypothesis needs further empirical exploration. In relation to learned hopefulness theory it could be that the variables with significant relationships could be skills or resources that individuals can utilize to foster hope. Additional studies into these variables, such as self-esteem, self-care or illness uncertainty, could facilitate testing this hypothesis, especially if studies were conducted over a number of different illness populations.

Due to inconsistent findings, some variables must be considered to not be reliable correlates with hope across illness populations, despite some strong relationships being observed in individual studies. A significant relationship with QoL was found in two studies, but no relationship in another two studies. This is particularly interesting because two of the studies that measured QoL were investigating cancer populations (Post-White et al., 1996; Vellone et al., 2006) and they found contradicting results. As such, the disagreement in findings, and particularly within the same illness population, means that QoL cannot be currently viewed as a variable that has consistent relationships with hope across illness populations. QoL could be considered the outcome of a number of different illness and psychological processes, and as such could be inconsistently related with hope due to other factors. The same conclusion can be drawn for spirituality and coping at this time. This is due to, despite three papers each investigating the variables, no agreement being reached on whether the relationship with

hope was significant or not. Additionally, as all the studies were investigating cancer populations, this disagreement was within the same clinical population. A possible explanation for this, especially in the case of spirituality, is the study characteristics. The non-significant relationship was observed in a small population ($n = 32$, (Post-White et al., 1996)) whereas the significant relationships were found in a larger population (combined participant numbers = 110, (Fehring et al., 1997; Gibson, 2003)). It is also true for coping that greater combined participant numbers contributed to the significant relationships, but the study which found no significant relationship did also employ a large sample ($n = 159$, (Zhang Jing et al., 2010)). It can only be concluded at this stage that both spirituality and coping cannot be seen as reliable correlates. More robust studies, with different illness populations, are needed in order to resolve the inconsistencies found in this review.

All conclusions from this review need to be viewed in the light of the quality of the research from which they have been drawn. The majority of the studies were of good methodological and theoretical quality, with 79% of studies scoring 12 out of 15 or above on the quality checklist employed. All papers included reliable and valid measures of hope and correlational analysis that could inform the results and discussion of this review. Those studies which scored lower were due to omissions of inclusion/exclusion criteria, response rates and information regarding total numbers of participants approached. These quality shortcomings could potentially have resulted in populations that were biased, which could impact the validity of results. However, this seems unlikely as the findings from the four lowest quality papers (Crothers et al., 2005; Fehring et al., 1997; Hsu et al., 2003; Parenteau et al., 2006) all agree with findings produced by other studies with higher quality scores. An example of this is the -0.38

illness uncertainty relationship found by Hsu and colleagues (Hsu et al., 2003), which is similar to the -0.49 illness uncertainty relationship found by Staples & Jeffrey (1997). This similarity is despite a 6 point difference between the studies in terms of quality assessment.

With the focus of the review being on correlation analysis it is important to consider the sample sizes involved in the calculation of r values. Some of the most robust findings, such as the strong correlations shown in individuals with gastroparesis (Parenteau et al., 2006), were from relatively small samples. However, these findings have been supported by other studies with larger sample sizes (Billington et al., 2008 & Vellone et al., 2006). Additionally, contradictory findings in spirituality (Post-White et al., 1996) and QoL (Staples & Jeffrey, 1997) came from small samples ($n = <25$). The influence of sample size has already been commented on as a possible explanation for the contradiction in the spirituality findings, but this sample size does not appear to be an influencing factor on the QoL findings because non-significant findings were found in an additional study and significant correlations were of low strength.

Another area of consideration when interpreting the findings of this review are the measures of hope themselves. Two of the measures, the Snyder Trait and Snyder State Hope Scales, were not developed for use in illness populations and were not normed with illness populations. However, the findings of the papers that employed these measures (Billington et al., 2008; Parenteau et al., 2006) were supported by other papers that used measures that were developed with an illness population. All the measures

have been shown to be reliable and valid¹² but the construct validity of the measures needs to be considered. A test of good construct validity is that measures show both convergent¹³ and divergent¹⁴ validity (Campbell & Frisk, 1959). A number of the hope measures used in the studies in the review have been found to highly correlate with each other ($r = >.8$) (Farran et al., 1995) indicating that the measures show convergent validity. However, divergent validity for hope measures is less evident. In the development of measures the majority of authors chose hopelessness scales to show divergent validity, and in this respect the measures showed good divergent validity (Farran et al., 1995). There is little comparison with other measures, both of positive and negative constructs. Therefore, there is a possibility of tautology within the measurement of the construct of hope. For example, the Herth Hope Index (Herth, 1992) includes questions around loneliness and fear, which could be seen as part of the constructs of social support and anxiety respectively. Despite this potential for tautology, the argument can be made that only a few of the observed relationships with hope were of very strong or strong strength, indicating that what is being measured is a sufficiently different construct.

This review, and its conclusions, show a number of limitations. Due to the focus of the review being correlations between hope and other psychosocial variables it is only possible to comment on which psychosocial variables are associated with hope, versus which variables predict or contribute to levels of hope. Only a small number of studies have employed regression analysis to look at predictor relationships in regard to hope (Berendes, Keefe, Somers, Kothadia, Porter & Cheavens, 2010; Farone, Fitzpatrick, & Bushfield, 2008). Both studies looked at the relationship between hope and depression,

¹² See Appendix 5 for information regarding reliability and validity of hope measures

¹³ The extent to which measures of the same construct correlate with each other

¹⁴ The extent to which measures of one construct differ from measures of other constructs

with hope as an input variable, and both found that hope significantly predicted depression levels, with higher hope resulting in lower depression. While this is an interesting finding, it does not allow for conclusions about which variables affect experiences of hope in people living with chronic illness, especially as the few studies to conduct regression analysis did not include hope as an outcome variable. It would therefore be useful if future research could employ a regression analysis approach, but one in which hope is the outcome variable, so that it can be observed which of the variables that have been shown to correlate with hope actually predict it. If it were possible to determine what attributes or factors foster hope, then they can be encouraged and employed within clinical settings with a view to encouraging movement towards health.

A further limitation is the illness populations investigated by the included papers. Only 6 broad illness populations were investigated (Cancer, renal, cardiac, MS, Gastroparesis and COPD). Notable omissions include diabetes, arthritis, HIV/AIDS and autoimmune diseases. As such, while collated findings can suggest that certain variables are consistent across a number of chronic illnesses, there are still numerous illnesses that have no research into the relationship between hope and other variables. Therefore, it is not possible to make a definite statement about the relationship across all illnesses, and a tentative position must be adopted. Further research is needed into additional illness populations. Whether or not these investigations would provide confirmation or conflict is unknown but it would be useful nonetheless because, if a future aim is to foster hope in chronic illness, it would be necessary to know which variables are significant for which populations.

In addition to the suggestions made previously, it would be recommended that once the additional suggested research has taken place, the literature is reviewed again with a view to constructing a theoretical model of hope for chronic illness. This would need to take into account the psychosocial variables mentioned within this review, as well as physical/biological factors, and how they predict and/or mediate the experiences of hope in people living with chronic illness. Hopefulness theory and sense of coherence could also be included in this i.e. looking at how resources and/or skills are employed to foster hope. A tentative position would be that depression and anxiety are detrimental to hope whilst social support and other variables such as self-esteem and self-care serve to facilitate hope. To build on existing theory, the negative correlates could prevent people from being able to take steps towards hope (i.e. they hamper agency thinking) while positive correlates could be resources individuals employ to increase learned hopefulness. Such a model would hopefully allow informed interventions tailored to the fostering of hope with the eventual outcome of improved physical and mental health. The importance of this is the potential huge cost saving to healthcare organisations, so any means by which health can be promoted would be beneficial, not just for patients themselves but the systems that treat them.

In conclusion, this review suggests that low mood/depression shows the most consistent and powerful negative relationship with hope, with social support and anxiety the next most reliable relationships. Despite being studied by a number of papers, QoL was not found to have a consistent relationship with hope. Future research looking at wider illness populations and employing a regression analysis approach with hope as an outcome are recommended to fully understand the relationship between hope and other variables that exists within chronic illness populations. The incorporation of positive

constructs, not just hope, into research, both psychological and medical, may potentially lead to the discovery of means to develop total health for those suffering from chronic illness.

References

- Alberto, J., & Joyner, B. (2008). Hope, optimism, and self-care among better breathers support group members with chronic obstructive pulmonary disease. *Applied Nursing Research*, 21(4), 212-217. doi: 10.1016/j.apnr.2006.12.005
- Amirkhan, J.H. & Greaves, H. (2003) Sense of coherence and stress: the mechanics of a healthy disposition. *Psychology and Health*, 18, 31-62. doi: 10.1080/0887044021000044233
- Antonovsky A. (1979). *Health, stress and coping*. San Francisco: Jossey-Bass.
- Bartley, M. (2006). *Capability and resilience: beating the odds*. London: University College London.
- Berendes, D., Keefe, F. J., Somers, T. J., Kothadia, S. M., Porter, L. S., & Cheavens, J. S. (2010). Hope in the context of lung cancer: Relationships of hope to symptoms and psychological distress. *Journal of Pain and Symptom Management*, 40(2), 174-182. doi: 10.1016/j.jpainsymman.2010.01.014
- Billington, E., Simpson, J., Unwin, J., Bray, D., & Giles, D. (2008). Does hope predict adjustment to end-stage renal failure and consequent dialysis? *British Journal of Health Psychology*, 13(4), 683-699. doi: 10.1348/135910707X248959
- Buckley, J. & Herth, K. (2004) Fostering hope in terminally ill patients. *Nursing Standard*. 19(10): 33–41.
- Campbell, D. T. & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81-105.
- Chen, M. (2003). Pain and hope in patients with cancer - A role for cognition. *Cancer Nursing*, 26(1), 61-67. doi: 10.1097/00002820-200302000-00009

College of Medicine (2011) The Crisis In Costs. Retrieved from

<http://www.collegeofmedicine.eu/crisis-costs> on 18th February 2012

Crothers, M., Tomter, H., & Garske, J. (2005). The relationships between satisfaction with social support, affect balance, and hope in cancer patients. *Journal of Psychosocial Oncology*, 23(4), 103-118. doi: 10.1300/J077v23n04_06

Davidson, P. M., Dracup, K., Phillips, J., Daly, J. & Padilla, G. (2007) Preparing for the worst while hoping for the best – The relevance of hope in heart failure illness trajectory. *Journal of Cardiovascular Nursing*, 22 (3), 159-165.

Department of Health [DOH] (2004) Improving Chronic Disease Management.

Retrieved from

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4075213.pdf on 18th February 2012.

Department of Health [DOH] (2011) Quality, Innovation, Productivity and Prevention (QIPP). Retrieved from

<http://www.dh.gov.uk/en/Healthcare/Qualityandproductivity/QIPP/index.htm> on 18th February 2012.

Downs, S. & Black, N. (1998). The Feasibility of Creating a Checklist for the Assessment of the Methodological Quality Both of Randomised and Non-Randomised Studies of Health Care Interventions. *Journal of Epidemiology and Community Health*, 52; 377-384. doi: 10.1136/jech.52.6.377

Dufault K. & Martocchio, B. (1985). Hope: Its Spheres and Dimensions. *Nursing Clinics of North America*, 20(2), 379-391.

- Eriksson, M. & Lindström, B.(2006). Antonovsky's sense of coherence scale and the relation with health: a systematic review. *Journal of Epidemiology and Community Health*, 60(5), 376-381.doi: 10.1136/jech.2005.041616
- Farone, D. W., Fitzpatrick, T. R., & Bushfield, S. Y. (2008). Hope, locus of control, and quality of health among elder latina cancer survivors. *Social Work in Health Care*, 46(2), 51-70. doi: 10.1300/J010v46n02_04
- Farran, C. J., Herth, K. A. & Popovich, J. M. (1995). *Hope and hopelessness: Critical clinical construct*. Thousands Oaks, CA: Sage Publications
- Fehring, R. J., Miller, J. F., & Shaw, C. (1997). Spiritual well-being, religiosity, hope, depression, and other mood states in elderly people coping with cancer. *Oncology Nursing Forum*, 24(4), 663-671.
- Felder, B. (2004). Hope and coping in patients with cancer diagnoses. *Cancer Nursing*, 27(4), 320-324. doi: 10.1097/00002820-200407000-00009
- Foote, A. W., Piazza, D., Holcombe, J., Paul, P., & Daffin, P. (1990). Hope, self-esteem and social support in persons with multiple sclerosis. *Journal of Neuroscience Nursing*, 22(3), 155-159. doi: 10.1097/01376517-199006000-00004
- Frieson, T. C., & Frieson, C. W. (1996). Relationship between hope and self-esteem in renal transplant recipients. *Journal of Transplant Coordination*, 6(1), 20-23.
- Gibson, L. (2003). Inter-relationships among sense of coherence, hope, and spiritual perspective (inner resources) of african-american and european-american breast cancer survivors. *Applied Nursing Research*, 16(4), 236-244. doi: 10.1016/S0897-1897(03)00053-3

- Hart, K.E., Hittner, J.B. & Paras, K.C. (1991) Sense of coherence, trait anxiety and the perceived ability of social support. *Journal of Research Perspectives*, 25,137-145.
- Herth, K. A. (1989). The relationship between level of hope and level of coping response and other variables in patients with cancer. *Oncology Nursing Forum*, 16(1), 67-72.
- Herth, K. A. (1990) Fostering hope in terminally ill people. *Journal of Advance Nursing*, 15, 1250-1259.doi: 10.1111/j.1365-2648.1990.tb01740.x
- Higgins, J.P.T., & Green, S. (2011). Cochrane handbook for systematic reviews of interventions version 5.1.0. Retrieved from <http://www.cochrane-handbook.org>
- Hsu, T., Lu, M., Tsou, T., & Lin, C. (2003). The relationship of pain, uncertainty, and hope in taiwanese lung cancer patients. *Journal of Pain and Symptom Management*, 26(3), 835-842. doi: 10.1016/S0885-3924(03)00257-4
- Khan, K.S., Riet, G., Popay, J., Nixon, J., and Kleijnen, J. (2001). Study Quality Assessment. In Khan, K.S., Riet, G., Popay, J., Nixon, J., and Kleijnen, J. (Eds.). *Undertaking Systematic Reviews of Research on Effectiveness: CRD's Guidance for Carrying Out Commissioning Reviews. CRD Report number 4. (2nd Ed.) (pp1-20)*. New York: NHS Centre For Reviews and Dissemination
- Lin, C., & Tsay, H. (2005). Relationships among perceived diagnostic disclosure, health locus of control, and levels of hope in taiwanese cancer patients. *Psycho-Oncology*, 14(5), 376-385. doi: 10.1002/pon.854
- Lindstrom, B. & Eriksson, M. (2005). Salutogenesis. *Journal Epidemiological Community Health*, 59, 440–2.doi: 10.1136/jech.2005.034777

- Morgan, A. & Ziglio, E. (2007). Revitalising the evidence base for public health: an assets model. *Promotion and Education*, 14, 17.
- National Institute for Health and Clinical Excellence. (2007). *The Guideline Manual*. London: National Institute of Health and Clinical Excellence.
- Parenteau, S., Gallant, S., Sarosiek, I., & McCallum, R. (2006). The role of hope in the psychological adjustment of gastropareutic patients receiving the gastric pacemaker: A longitudinal study. *Journal of Clinical Psychology in Medical Settings*, 13(1), 49-56. doi: 10.1007/s10880-005-9005-4
- Post-White, J., Ceronsky, C., Kreitzer, M. J., Nickelson, K., Drew, D., Mackey, K. W. & Gutknecht, S. (1996). Hope, spirituality, sense of coherence, and quality of life in patients with cancer. *Oncology Nursing Forum*, 23(10), 1571-1579.
- Rustoen, T., Cooper, B. A., & Miaskowski, C. (2010). The importance of hope as a mediator of psychological distress and life satisfaction in a community sample of cancer patients. *Cancer Nursing*, 33(4), 258-267. doi: 10.1097/NCC.0b013e3181d6fb61
- Scioli, A., Chamberlin, C. M., Samor, C. M., Lapointe, A. B., Campbell, T. L., & Macleod, A. R. (1997). A prospective study of hope, optimism, and health. *Psychological Reports*, 81, 723-733. doi: 10.2466/pr0.1997.81.3.723
- Snyder, C. R. (2002) Hope Theory: Rainbows In The Mind. *Psychological Enquiry*, 13 (4), 249-275. doi: 10.1207/S15327965PLI1304_01
- Staples, P., & Jeffrey, J. (1997). Quality of life, hope, and uncertainty of cardiac patients and their spouses before coronary artery bypass surgery. *Canadian Journal of Cardiovascular Nursing*, 8(1), 7-16.

- STROBE Initiative: von Elm, E., Altman, D.G., Egger, M., Pocock, S.J., Gøtzsche, P.C., Vandenbroucke, J.P. (2008). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for Reporting Observational Studies. *Journal of Clinical Epidemiology*, 61(4); 344-349.doi: 10.1016/j.jclinepi.2007.11.008
- Vellone, E., Rego, M. L., Galletti, C., & Cohen, M. Z. (2006). Hope and related variables in italian cancer patients. *Cancer Nursing*, 29(5), 356-366. doi: 10.1097/00002820-200609000-00002
- Wang, L., Chang, P., Shih, F., Sun, C., & Jeng, C. (2006). Self-care behavior, hope, and social support in taiwanese patients awaiting heart transplantation. *Journal of Psychosomatic Research*, 61(4), 485-491. doi: 10.1016/j.jpsychores.2004.11.013
- Wiles, R., Cott, C. & Gibson, B.E. (2008). Hope, expectations and recovery from illness: A narrative synthesis of qualitative research. *Journal of Advanced Nursing*, 64, 564–573. doi: 10.1111/j.1365-2648.2008.04815.x
- World Health Organisation [WHO] (2011). Noncommunicable Diseases: Country Profiles 2011. Retrieved from http://whqlibdoc.who.int/publications/2011/9789241502283_eng.pdf on 19th July 2012.
- World Health Organisation [WHO] (2012) Chronic diseases. Retrieved from http://www.who.int/topics/chronic_diseases/en/ on 18th February 2012.
- Zhang Jing, Gao Wei, Wang Ping, & Wu Zhong-hui. (2010). Relationships among hope, coping style and social support for breast cancer patients. *Chinese Medical Journal*, 123(17), 2331-2335.

Zimmerman, M. A. (1990). Toward a theory of learned hopefulness: A structural model analysis of participation and empowerment. *Journal of Research in Personality*, 24(1), 71-86. Doi: 10.1016/0092-6566(90)90007-S

PART TWO:

Predictors of Hope in Individuals living with Cardiovascular Disease

This paper was written in accordance with guidance for authors for the journal 'Health Psychology' (Appendix 7)

Predictors of Hope in Individuals living with Cardiovascular Disease

Abstract

Objective: Hope has been found to result in better health outcomes for individuals living with CVD, although it is currently unknown what factors predict hope. This study quantitatively examined predictors of hope for individuals with CVD, as well as systematically analysing experiential reports of predictors of hope. **Methods:** 112 individuals living with CVD completed an online questionnaire which measured hope, depression, health-related quality of life, illness perception, locus of control and social support. A further 7 individuals completed a semi-structured interview which focused on their experiences of hope and what they had found helpful in building and maintaining hope. **Results:** All variables, apart from locus of control – powerful others, were found to significantly correlate with hope. Additionally, NYHA classification was found to be significantly related to hope. Depression was found to be the only significant predictor of hope following regression analysis. Following IPA of the interview transcripts three super-ordinate themes emerged in relation to predicting hope: finding and using inner resources, a positive and supportive environment and developing perspective and knowledge. **Conclusions:** Hope in CVD is a multi-faceted concept, inhibited by depression and fostered by personal and environmental resources. Detection and alleviation of depressed mood as well as the promotion of assets are important for maximising hope in this population.

Introduction

Cardiovascular disease (CVD) is an umbrella term which covers a wide range of cardiac illnesses, such as coronary heart disease (CHD)¹, cardiomyopathy² and heart failure³. It is the biggest worldwide killer, accounting for 29% of global deaths yearly, with the number predicted to rise significantly in the future (WHO, 2010). In the UK, over 13% of the population have a diagnosis of some form of CVD (BHF, 2008), and it accounts for one third of deaths each year in the UK (BHF, 2010a). The estimated cost to UK health services is £14.4 billion with a further £16 billion of costs through lost productivity and informal care (BHF, 2010b). The majority of the expense to health services is from inpatient care and continued medication so any means to prevent readmissions and optimise self-management would be hugely beneficial. One approach to achieving this is to move away from a focus on problems and illness to focusing on positive assets and wellbeing⁴.

Health has been theorised to exist on a continuum between total ill health and total health (Antonovsky, 1979). Salutogenic theory posits that the promotion of positive assets is equally important as alleviating disease in order to move towards better health (Antonovsky, 1979). The approach focuses on the resources that exist within individuals, groups and systems which promote and maintain health (Antonovsky, 1979). Resources can range from genetic to psychosocial and have been termed General Resistance Resources (GRRs) (Antonovsky, 1979). GRRs can be employed dynamically and repeatedly to assist in movement towards total health (Lindström & Eriksson, 2005). When employed successfully GRRs have already been shown to result in positive health outcomes (Morgan & Ziglio, 2007). The ability to use these resources

¹ Narrowing or blockages of coronary arteries

² Deterioration in function of the heart muscle

³ Inability of the heart to supply sufficient blood flow to the body

⁴ See appendix 8 for an outline of positive psychology

(sense of coherence), is strongly related to resilience and positive subjective state of health (Eriksson & Lindström, 2006). Furthermore, lower levels of stress (Amirkahn & Greaves, 2003), anxiety (Hart, Hittner & Paras, 1991) and risk behaviour (Bartley, 2006) are associated with an individual's ability to use their resources. A great number of assets have already been identified thus far, and this paper focuses on investigating one of these: hope.

Hope has been defined as "a multidimensional dynamic life force characterized by a confident yet uncertain expectation of achieving good, which, to the hoping person, is realistically possible and personally significant" (Dufault & Martocchio, 1985, p 382). A well accepted view of hope is that it is constructed of pathway and agency thinking (Snyder, 2002). Pathway thinking is the steps one needs to take towards a desired outcome while agency thinking is the motivation and confidence an individual has to use their pathway (Snyder, 2002). Another understanding of hope, learned hopefulness, is one that has already been identified in salutogenic thinking. Learned hopefulness theory describes hope as a process which involves individuals learning and utilizing skills that imbue a sense of empowerment (Zimmerman, 1990). Through finding hope individuals are able to "limit the debilitating effects of problems" (Zimmerman, 1990, p71), be they mental or physical. Empirical study has already found evidence for the protective qualities of hope. Higher levels of hope are correlated with lower severity and frequency of illness (Scioli et al. 1997). In particular relevance to CVD, hope has been identified as a significant factor in illness trajectory following heart failure (Davidson, Dracup, Phillips, Daly & Padilla, 2007).

Despite the emerging evidence that hope can play a significant part in positively impacting CVD outcomes, there has been little research into the area. The majority of existing research focuses on the relationship hope has with other variables. For example, hope has been found to be significantly correlated with social support (Wang, Chang, Shih, Sun & Jeng, 2006) and health-related quality of life (HR-QoL) (Staples & Jeffrey, 1997) in CVD populations. In individuals with heart failure, self-assessed health and life satisfaction were found to be significant predictors of hope (Rustøen, Howie, Eidsmo & Moum, 2005). The measures employed in this study, however, were not validated and consisted of single Likert scale questions for both self-assessed health and life satisfaction. Rustøen and colleagues (2005) are thus far the only researchers to have used regression analysis, rather than correlations, in their investigation into hope and CVD, which is something the current study has aimed to replicate.

The current study had a hypothesis and an aim designed to answer the research question of what are the predictors of hope in individuals living with CVD. The hypothesis was that there would be significant predictors of hope in people living with CVD. It was not possible to identify what predictors of hope in a CVD population were, due to paucity and methodological shortcomings of existing research. It was, however, possible to identify what the most likely predictors may have been. The variables selected for investigation were locus of control, social support, illness perception, health related quality of life and depression. Social support and HR-QoL were chosen based on their already demonstrated relationship with hope within the CVD population (Staples & Jeffrey, 1997; Wang et al, 2006). LoC and illness perception were both identified as potential predictors due to cancer research identifying them as significantly related to hope (Chen, 2003; Lin & Tsay, 2005). Depression was selected because in other chronic

physical health conditions it has been found to have a strong relationship with hope (Billington, Simpson, Unwin, Bray & Giles, 2008; Crothers, Tomter & Garske, 2005; Parenteau, Gallant, Sarosiek & McCallum, 2006; Vellone, Rego, Galletti & Cohen, 2006). Regression analysis was planned to be used to test this hypothesis. The aim was to uncover what themes individuals believe promote or sustain their experiences of hope would be present in subjective reports. It was thought that themes similar to the variables investigated in regard to the first aim would also be present in the subjective reports of hope given by people living with CVD. Interpretive Phenomenological Analysis (IPA) was planned to allow for testing of this hypothesis. The findings from the two hypotheses were compared for the purposes of triangulation and are discussed in relation to existing research and theory.

Method

Study Design

To allow the research question to be answered two studies were conducted. Study 1 employed a quantitative design and aimed to test the hypothesis. This was achieved through completion of an online questionnaire which included a range of variables. Study 2 was designed to investigate the aim and did so using qualitative methodology. This was achieved through semi-structured interviews with individuals living with CVD.

Participants

Study 1: A sample of individuals living with CVD were recruited through CVD online forums and CVD⁵ charities. Exclusion criteria for the study were: age under 18 years old, a diagnosis of congenital heart disease, a diagnosis of serious mental health problems, a diagnosis of another serious on-going medical condition, e.g. cancer or diabetes, or were not English speaking.

An advertisement⁶ was posted on online forums, included in newsletters or hosted on websites for 11 months between April 2011 and March 2012. It was not possible to determine the number of individuals who viewed the advertisement. It was however possible to count the number of individuals who visited the online questionnaire website. The total number of visitors was 140, and of these 112 completed the online questionnaire survey (80% response rate). The average age of participants was 59.0 years (SD=12.7), with 49% being male. Country of residence was 49.1% in the United Kingdom, 43.8% in North America, 4.5 % in Australia and 2.7% in other countries. The sample was 94.6% white. Diagnoses were split between six main categories: Coronary Heart Disease (CHD)/Angina (41.1%); Heart failure (12.5%); Heart attack (15.2%); Cardiovascular/Atherosclerosis (14.3%); Cardiomyopathy (11.6%) and Sick Sinus Syndrome (SSS) (5.4%). Illness severity, as classified using the New York Heart Association (NYHA) Functional Classification⁷, for the sample was: Class I (29.5%); Class II (43.8%); Class III (24.1%) & Class IV (2.7%). The mean time since diagnosis was 85.5 months (SD=103.6) and 70.5% of the sample had experience of a friend or relative having some form of CVD.

⁵ See appendix 9 for a list of contacted forums and charities

⁶ See appendix 10 for a copy of the online advertisement

⁷ NYHA Functional classification places patients in one of four categories based on limitations placed on physical activity by breathlessness and/or angina pain. NYHA classification is scaled from Class I (no symptoms or limitations) to Class IV (severe limitations, mostly bedbound)

Study 2: A sample of individuals living with CVD was recruited through heart support groups from 2 regional district hospitals in the north of England. Participants were subject to the same exclusion criteria as those participating in study 1.

Over an 8 month period, August 2011 to March 2012, information sheets were distributed through heart support groups. Information sheets were provided to 71 individuals. Of these 71, 7 individuals contacted the researcher and completed the semi-structured interview (10% response rate). The average age of participants was 67 years ($SD = 7.5$), with 85% male. All participants resided in the United Kingdom. Diagnoses of participants were Angina ($n = 4$). Heart Attack ($n = 2$) and Cardiomyopathy ($n = 1$). NYHA Functional Classifications were as such; 3 participants were Class I, 3 participants Class II and 1 participant Class III. Mean time since diagnosis was 147 months ($SD = 165.4$), all participants were of White-British ethnicity and 85% of participants had experience of friends or relatives having CVD.

Procedure and Measures

The study was approved by a local research ethics committee⁸ and was peer reviewed by a university post-graduate department.

Study 1: All participants were required to read an information sheet⁹ prior to providing informed consent through a tick box system¹⁰. The questionnaire¹¹ was built and hosted on www.surveymonkey.com and comprised a number of measures:

⁸ See appendix 11 for a copy of the ethical approval letter

Hope: The measure of hope employed was the Herth Hope Index (HHI) (Herth 1992). This is a brief 12 item scale that assesses an individual's current hope. All questions are on a 4 point Likert scale ranging from Strongly Disagree to Strongly Agree. Scores range from 12 to 48 with a higher score meaning greater experiences of hope. The HHI has been used already in research into CVD (Rustøen et al, 2005) and has been shown to have high internal consistency ($\alpha = .97$) and test-retest reliability ($r = .91$) (Herth, 1992).

Depression: The Cardiac Depression Scale (CDS) (Hare & Davis, 1996) is a 26 item scale which has been specifically designed to be sensitive to depressive symptomology in individuals with CVD. Questions are on a 7 point Likert scale with appropriate anchors. The scale comprises of 7 subscales but for the purposes of this study the overall depression score calculated from all 26 items was used. Scores vary from 26 to 182 with a higher score indicating higher levels of depressions. The CDS has good test-retest reliability ($r = .86$) and high internal consistency ($\alpha = .91$). The CDS has been validated in numerous languages and populations (Hare, 2010) and has high correlations with the Beck Depression Scale ($r = .73$) (Hare & Davis, 1996).

Illness Perception: The Brief Illness Perception Questionnaire (BIPQ) was used to assess illness perception in this study (Broadbent, Petrie, Main & Weinman, 2006). The BIPQ is an abbreviated 8 item version of the Illness Perception Questionnaire. All items are scored on an 11 point Likert scale with appropriate anchors. Each item constitutes its own subscale although for the purpose of the current study the overall illness

⁹ See appendix 12 for Study 1 participant information sheet

¹⁰ See appendix 13 for Study 1 consent form

¹¹ See appendix 14 for the online survey converted to text format

perception score was calculated. This is done by averaging the scores over the 8 items with a higher score meaning illness is perceived as more threatening (Broadbent et al., 2006). The BIPQ has good test-retest reliability ($r = .71$), highly significant concurrent validity when compared to the full Illness Perception Questionnaire and good predictive validity in a variety of areas such as anxiety, return to work and quality of life (Broadbent et al., 2006)

Health-Related Quality of Life: To assess HR-QoL participants completed the MacNew Health-Related Quality of Life Questionnaire (Valenti, Lim, Heller & Knapp, 1996).

The MacNew is a measure of HR-QoL developed specifically for use in CVD populations. It consists of 27 items rated on a 7 point Likert scale which refer to limitations placed on emotional, physical or social QoL in the past 2 weeks. The MacNew consists of three subscales which correspond to the emotional, physical and social domains, although for the purposes of this study the Global HR-QoL scale was used. Internal validity has been demonstrated to be high ($\alpha = .95$) as has construct validity (Valenti et al., 1996).

Locus of Control: Participants completed the Multidimensional Health Locus Of Control Scale (MHLoC) (Wallston, Wallston & DeVellis, 1978). There are various forms of the MHLoC and the current study used Form A which is an 18 item scale containing three subscales: internal, powerful external others and external chance. These scales are not mutually exclusive, with high scores possible on multiple subscales. Items are scored on a 6 point Likert scale ranging from Strongly Disagree to Strongly Agree. Internal validity is high ($\alpha = .67$ to $.77$), as is predictive validity for health status, although this varied across subscales (Wallston, Wallston & DeVellis, 1978).

Social Support: The Duke-UNC Functional Social Support Questionnaire (FSSQ) (Broadhead, Gehlback, Van De Gruy & Kaplan, 1988) was used to measure social support. The FSSQ is an 8 item scale that measures perceived social support and has been employed in a variety of illness populations and age ranges. Each item is scored on a 5 point Likert scale with appropriate anchors and then scores are averaged to gain an overall measure of social support, with higher scores indicating greater perceived social support. Test-retest reliability is good ($r = .66$) as is internal validity ($\alpha = .62$). In addition to this, high correlations with a number of longer measures of social support have been found (Broadhead et al., 1988)

In addition to the standardised measures completed, participants also provided demographic information. This included age, gender, country of residence and ethnicity. Information about participants CVD was also collected and this included diagnoses received, time since first diagnosis and self-rated NYHA Functional Classification. Finally, participants were asked if they had experience of friends or family being diagnosed with CVD prior to their own diagnosis.

Study 2: Participants who wished to undertake the interview contacted the researcher using information provided on information sheets¹² distributed to heart support groups. Informed consent was validated before the beginning of the interview through a consent form¹³. Prior to the completion of the semi-structured interview participants provided demographic and illness information identical to that provided in Study 1. Participants also completed the HHI.

¹² See Appendix 15 for Study 2 participant information sheet

¹³ See Appendix 16 for Study 2 consent form

The semi-structured interview¹⁴ consisted of 7 questions which can be seen in Table I. From each of these questions, additional open and exploratory questions were asked by the researcher to elicit further information.

Table I: Question from the semi-structured interview in Study 2.

Interview Questions
What have your experiences of hope been since your diagnosis?
Have you had times that you've experienced low mood and has this affected any experiences of hope you have had?
How do you see your illness and has this affected any experiences of hope you have had?
How would you rate your current quality of life and has this affected any experiences of hope you have had?
How in control of your illness do you feel and has this affected any experiences of hope you have had?
What have been your experiences of receiving support from people you know and has this affected any experiences of hope you have had?
Are there any other areas apart from those already discussed that you feel have had an impact on your experiences of hope?

Data Analysis

Study 1: It was calculated that a sample of at least 106 participants would be required to allow regression analysis with sufficient power (Tabachnick & Fidell, 2007). The normality of data was checked using Kolmogorov-Smirnov. Pearson's r correlations and one-way analysis of variance (ANOVA) were performed to check if any of the demographic or illness variables were significantly correlated with hope or significantly explained variance in hope. Any variables found to be significant in this analysis were included in the first block of the linear regression. Pearson's r values were also calculated between hope and the predictor variables. Any variables that were not significantly correlated, or that had r values greater than 0.9, were excluded from block

¹⁴ See Appendix 17 for the full interview schedule

2 of the linear regression. Included variables were then used to perform the 2 block linear regression.

Study 2: IPA was used because the aim was to uncover the predictive themes relating to hope in personal experiences of individuals living with CVD, which IPA could facilitate. Following completion of interviews they were transcribed and checked for accuracy. In addition, three participants¹⁵ checked that their transcripts were a true representation of their interview. IPA analysis followed guidelines described by Smith, Flowers & Larkin (2009). Transcripts were read and notes of interest were made in the left hand margin. This procedure was repeated several times by the researcher (male, 7 transcripts) as well as a research supervisor (female, 3 transcripts) and a Trainee Clinical Psychologist (female, 4 transcripts). Initial notes were reviewed and emergent themes were recorded. These themes were discussed between the researcher and the co-analysts. This process is consistent with recommended procedure to use supervision and collaboration to develop coherent interpretation (Smith, Flowers & Larkin, 2009), and also allowed for deeper exploration and validity checks. Three interviewees were contacted to provide member validation of the developed themes. These themes were compared across transcripts and were included in the analysis if they occurred in over half the sample.

With IPA being a subjective process it is important to detail the assumptions of the researcher so that themes can be viewed in light of these assumptions. The researcher in this study entered with the assumptions that truth can exist in many forms, be it

¹⁵ All participants were asked if they were willing to be contacted during analysis. 6 consented and 3 were chosen at random to be contacted in the analysis stage.

statistical or subjective, but that any form of truth does not take precedent over any other. Additionally, the researcher is interested in positive psychology and positive assets so is therefore biased towards the positive aspects of human experience.

Results

Study 1: Scale scores for all measures were calculated and can be seen in Table II.

Cronbach's alpha was also calculated for the sample, with all scales showing good reliability ($\alpha = >0.7$). All data were found to be normally distributed so parametric tests were employed throughout. One way ANOVAs were performed on hope with gender, country of residence, ethnicity, diagnosis, NYHA functional classification and experience of CVD as independent variables. Only NYHA functional classification was found to be significant ($F(3,111) = 5.470, p = .002$) with hope decreasing as severity increases. Pearson's r values were calculated for the relationship between age and hope and months since diagnosis and hope. Neither relationship was found to be significant.

Table II: Summary of variable scale scores for Study 1

	Hope	Depression	Illness Perception	HR-QoL	LoC Internal	LoC Chance	LoC Others	Social Support
Mean	38.41	90.89	38.03	5.09	23.44	17.72	19.57	4.05
SD	(4.88)	(22.92)	(12.49)	(1.12)	(6.35)	(6.36)	(6.41)	(0.84)
Alpha	.835	.890	.747	.954	.795	.766	.754	.889

Correlations were calculated for the relationship between hope and the predictor variables (Table III). Only LoC Powerful Others was not significantly correlated to hope. All other relationships were significant at the 0.05 level. Additionally, no variable had an r value of over 0.9 so none were removed due to co-linearity.

Table III: Pearson's r values for the relationship between hope and the predictor variables

	Depression	Illness Perception	HR-QoL	LoC – Internal	LoC – Chance	LoC- Powerful Others	Social Support
Pearson's r	-.684*	-.549*	.577*	.303*	-.294*	-.160	.448*

* $p < .05$

Regression analysis¹⁶ was performed to ascertain any significant predictors of hope. In the first block, NYHA functional classification was entered into the model. In the next

¹⁶ See appendix 18 for full statistical output

block, depression, illness perception, HR-QoL, LoC – Internal, LoC – Chance and Social support were entered (Table IV). NYHA functional classification was a significant predictor of hope in the first block, but only explained 4% of the variance in hope. When the other predictor variables were entered into the model, NYHA functional classification was no longer a significant predictor of hope. Only depression was a significant predictor of hope, with the total model explaining 51% of the total variance in hope.

Table IV: Multiple regression summary table showing effect of variables on hope (dependent variable)

Variable	Block 1					
	R^2	r	B	Df	F	P
Overall	.04			1,110	5.004	.027*
NYHA		-.21	-.21			.027*
	Block 2					
	R^2	r	B	Df	F	P
Overall	.51			7,104	15.924	<.001*
NYHA		-.21	.15			.083
Depression		-.68	-.60			<.001*
Illness Perception		-.55	.12			.463
HR-QoL		.58	.19			.178
LoC – Internal		.30	.12			.120
LoC – Chance		-.29	-.03			.698
Social Support		.45	.12			.172

**denotes significance at the 0.05 level*

Study 2: The mean score for study 2 participants on the HHI was 40.4 (SD = 3.98, alpha = .886), indicating a high level of hope. Following IPA analysis¹⁷, three super-ordinate themes were evident, and these occurred in all of the transcripts. Within these three

¹⁷ See appendix 19 for an example of worked IPA theme development

super-ordinate themes a number of associated sub-themes were identified, and can be seen in Table V. No apparent hierarchy of importance was indicated by participants. To aid in the understanding of these themes and how they relate to experiences of hope a theme of ‘What Hope Is’ was developed. This consists of a number of elements such as living well with my illness: “it’s a part of me now and I’ll live with it” (P5, 12), looking to the future: “seeing the grandkids grow up, that’d be grand” (P6, 15), knowing the steps necessary to go forward: “if I stay active then I might get back to work” (P1, 24) and keeping at it: “I’ll have set backs, and I already have, but it doesn’t stop me” (P3, 34). The three super-ordinate themes refer to what participants felt helped them form and sustain this view of hope.

Table V: Super-ordinate themes and associated sub themes identified as predictors of hope

Super-ordinate themes and associated sub themes		
Finding and using inner resources	A supportive and positive environment	Developing perspective and knowledge
Mental strength	Family support	Knowing your limits
Taking control of my illness	Using experts	Timescales
Being able to trust in others	Social consistency	Realistic perceptions
Staying active	Modelling	Congruence of needs
Adaptability		Seeing the big picture/stoicism
		Recognising recovery

When questioned about what made participants hopeful all identified that finding and utilising inner resources was an important factor. By being able to employ a variety of inner resources individuals felt more hopeful and confident in their ability to maintain hope and health. Mental strength was identified as the ability to keep positive in the face

of difficult circumstances. Beliefs such as “if you let that [the head] go, then that’s dead [the heart]” (P4, 26) and “I won’t be beat” (P5, 48) are formed that help individuals overcome difficult times and remain hopeful. The ability to take control of one’s own illness was also significant; “it’s down to people to decide for themselves what to do” (P3, 268). Trusting in others, particularly during difficult times was raised in most of the transcripts: “give my body over to the doctor and let him deal with it...I did that” (P7, 69), “you just place your trust in their hands” (P1, 399). The importance of staying active and trying to live as normal as possible was identified by all participants in their transcripts. Excerpts such as “I still carried on with what I was doing e.g. golfing, gardening, walking...” (P6, 105) highlight the role that maintaining an active lifestyle has upon keeping individuals hopeful for the future. A final sub theme of finding and using inner resources was adaptability. All participants commented on having to make adaptations to their lifestyle following their diagnoses, and how being able to positively adapt to their circumstances fortified their feelings of hope. “I had to take time off work...but I carried on strong” (P3, 221), “I’ve got more confident...I don’t stand back and wait” (P7, 148) and “if it’s very cold at the football I have to get double wrapped up now” (P2, 193) are just a few of the examples produced about making adaptations in light of illness, but are all instances where positive outcomes have been produced.

The second super-ordinate theme was a supportive and positive environment. This was constituted mainly of constructive relationships that helped individuals feel hopeful and maintain hope in the face of difficulties. The support offered from family members as a means to become hopeful was identified by all interviewees; “they’ve always been there for you” (P5,198), “how would I have survived on my own? I wouldn’t have done” (P1, 277), “family and friends wanting you to get back to normal. That goes a long way”

(P1,497). Using experts, both at times of crisis and as sources of information about illness, was another identified facet of the supportive and positive environment. Statements such as “I’m doing what the doctors tell me” (P6, 129), “I had every faith in the medical professionals” (P2, 225) and “you get the information from the specialist about...what you can do” (P3, 263) were common in this sub theme. A sense of social consistency was identified as helpful i.e. social activities and interactions occurring the same as they did prior to any illness; “they never stopped inviting me” (P1, 493). The final facet of the supportive and positive environment was individuals having experiences of positive modelling of recovery from those around them; “The workman said ”I had one [a heart attack] three years ago” and with that he shoved a boiler on his back ” (P2, 38).

The final super-ordinate theme was developing perspective and knowledge as a means to promoting hope. By developing a positive position in regards to their illness as well as specific, helpful knowledge interviewees reported that they were able to feel more hopeful about their situations and their futures. Knowing their own limitations following their diagnosis and treatment was identified by all participants as an important factor in promoting hope; “I know my limitations now” (P5, 74), “I’m sensible in what I can and cannot do” (P7, 76). Having an understanding about the timescale of recovery, particularly in the acute phase following surgery, helped individuals create an understanding of their path to recovery and this fostered experiences of hope; “just got to realise that it does take time...which I didn’t realise at the time” (P1, 515). In addition to this, having a realistic perception of their illness and what its impact on the rest of their life is going to be was an important aspect of developing perspective and knowledge; “you realise you have a limited life

expectancy...if everything goes well you're looking at 35, 40 years of life ahead" (P2, 447). There is the recognition that at different stages of illness an individual will have different needs. If the care and support provided is congruent with the needs of the individual at that point then that is a facilitator of hope, however, if the support does not match the needs this can elicit feelings of frustration and hinder hope. For example, when there is congruence with needs; "I'd say "a little further" and the wife would say "now, you've got to get back", it's a good reminder" (P5, 93), it is a positive experience, but when there is incongruence; "frustrating, them trying to slow me down" (P3, 145), positivity and hope are hindered. Being able to see one's illness as part of the bigger picture and approaching this in a stoic manner was another theme that helped individuals find hope; "It's logical isn't it? It runs in families, but you get on with it" (P7, 81), "it's a hazard of life. A bump in the road, that's all" (P3, 56). The final facet, and possibly the most frequently identified by interviewees, is recognising recovery. This is the process of seeing, measuring and appreciating the distance one has travelled in their recovery, particularly in light of current functioning versus post-operative/diagnosis functioning. "It [the operation] made a complete new man of me" (P6, 15) and "I was able to walk a bit further and when I could drive. It was all milestones on the way to recovery" (P1, 72) are some examples of this theme.

Discussion

This study investigated predictors of hope in individuals living with CVD. The hypothesis was that there would be significant predictors of hope in individuals living with CVD. Study 1 found that depression was the only significant predictor of hope, and that it was inversely predictive. It can therefore be seen that depression is an inhibitor of hope in individuals with CVD. The reason for this may be that the

symptoms of depression are incompatible with the way hope is structured. Recognised cognitive components of depression include a negative view of the self, world and future and memory bias toward negative events (Carr & McNulty, 2006). This combined with withdrawal and low energy levels could serve to inhibit the processes involved in forming hope. According to recognised theory, the process of forming hope is an active one that requires forward thinking to form a pathway and then motivation and confidence to follow that pathway (Snyder, 2002). It could be seen that the processes that accompany depressed mood would serve to inhibit one's ability to form and follow through with hopeful thinking. This is in keeping with existing theory that hope and depression are distinct constructs, with depression disrupting hopeful goal, pathway and agency focused thinking and action (Cheavens, 2000).

The aim was that themes of what individuals believed promoted their experiences of hope would be uncovered from subjective reports. These themes were identified as finding and using inner resources, a supportive and positive environment and developing perspective and knowledge. The positive slant of these themes is probably indicative of hope being a positive construct. The first theme, inner resources, could be directly linked to Zimmerman's notion of learned hopefulness (1990). Individuals could locate skills and resources within themselves that helped them find hope, which is how Zimmerman conceptualised the process of hope forming. These inner resources could also be seen as comparable to agency thinking in Snyder's hope theory (2002), i.e. they are the resources needed to follow the identified pathway. As hope is conceptualised as an internal process the other themes could be seen to augment this process. A supportive environment could be employed to help the development of these internal skills or to help sustain people in the face of difficulties. Perspective and knowledge could serve to

create an accurate perception of the challenges yet to be faced which could imbue drive and focus in the development and application of inner resources. Additionally, through retrospective processes they could reinforce the confidence they have in their ability to overcome difficulties and stay hopeful. This combination all identified themes contribute to one's experiences' of hope.

Due to two studies being conducted it is possible to triangulate findings to see if they show any agreement. At face value, it would appear that there is no agreement between these two studies. However, this does not equate to them being unrelated. Instead the disparate results highlight the diverse nature of hope. Those interviewed for the qualitative section all had high levels of hope (mean = 40.4). If, as previously suggested, depression is inhibitive of hope then it would be expected that those individuals with high levels of hope would be relatively free from depressed mood. It would be predicted that if interviews and subsequent IPA were carried out with participants who had low levels of hope then depression would emerge as an important contributor, albeit a negative one, to their experiences of hope.

In addition to relating to existing theory on hope the findings of this study are also worth comparing to salutogenic theory. As mentioned earlier, GRRs are employed to move towards total health, with one aspect of this being hopefulness. Numerous assets are involved in this process and many of the identified processes in this study can be linked to those already identified. Whilst depression is not identified as a salutogenic concept, there are numerous resources which could be seen to counteract depression, such as hardiness, coping, wellbeing and optimism (Eriksson, 2011). In direct relation to the positive predictors identified in Study 2, related identified resources could include

connectedness, resourcefulness, self-efficacy, attachment, inner strength and personal growth. Salutogenic theory already recognises that the processes that contribute to health are inter-connected (Lindstrom & Eriksson, 2005) and it could be concluded that the same is true for hope i.e. that it is intimately related to other positive factors within an individual and their environment. While there is the risk that by taking this positive stance the inhibitors (such as depression) are ignored, it is important to bear them in mind alongside positive contributors, especially as many of the positive contributors could also serve to alleviate depressed mood.

This study builds on the small, but increasing body of literature on hope in CVD populations. Findings show agreement with previous research in so far as significant relationships between hope and LoC, HR-QoL, Illness Perception and Social support were replicated. There were however, several areas of disagreement with the previous research (in particular the regression study by Rustøen and colleagues (2005)). Firstly, in this study a significant relationship between NYHA functional classification and hope was observed, but this was not the case in their work. The possible reason for this is the difference in the samples. In this study nearly 75% of respondents had NYHA classifications of Class I or II, whereas in Rustøen and colleagues' (2005) study only 19% of respondents were of Class I or II. It is possible that as illness severity increases hope is less variable. When there are fewer symptoms it would appear that what symptoms do exist impact significantly upon hope. Secondly, life-satisfaction was identified as a predictor of hope, whereas in this study the comparable variable, HR-QoL was not a significant predictor. This may be due to these being different concepts but is more likely due to the means of measurement applied to each variable. In the current study a psychometrically validated questionnaire was employed to measure the

variable, whereas in Rustøen and colleagues' (2005) work the variable was measured using a single Likert question.

Additionally, it is interesting to compare the results of this study with two regression studies involving depression and hope (Berendes et al., 2010; Farone, Fitzpatrick & Bushfield, 2008). Both studies took place in cancer populations and used hope as a predictor. Both found that hope significantly inversely predicted depression. This strengthens the view that depression and hope are inversely connected in chronic illness. However, in both cases when hope was the predictor, the percentage of variance explained was lower than the current study (31% and 13% versus 51% in the current study). This could be due to population differences or could be as a result of depression being more powerful as a predictor than as an outcome.

There are multiple clinical implications that can be proposed from the results of the current study. The first and most significant implication is that depression should be frequently screened for in individuals living with CVD. As hope has already been demonstrated to result in better illness outcomes it is important to resolve any difficulties that would inhibit it, namely depression. Better identification of depression, at point of diagnosis and on-going throughout illness course, could identify those patients experiencing depressive feelings or negative thinking and direct them towards appropriate support. There are already many well defined and efficacious treatment options available for individuals experiencing depressed mood (NICE, 2009). The monitoring of low mood could be carried out by any number of professionals, from cardiologists and GPs, to nurses and rehabilitation workers. A second clinical implication is in the rehabilitation offered to individuals with CVD. It is already

recommended and demonstrated that rehabilitation is an efficacious and cost-effective intervention for individuals with CVD (BHF, 2007). Alongside the support and lifestyle interventions already offered it may be potentially helpful to include elements of the helpful mechanisms identified in Study 2. For example, positive models could be introduced, individuals could be encouraged to recognise how far they have come in their recovery or means for individuals to take more control of their illness could be developed. By adding these, and other indicated processes, to existing programs of rehabilitation it may be possible to foster feelings of hope in individuals living with CVD and therefore achieve the health benefits that accompany this.

While a strength of the study is that standardised measures were used to obtain reliable measures of the predictor constructs it should be noted that the data is cross-sectional, so while regression analysis was possible it was not possible to track the influence of these variables on hope over time. This would not be overly difficult to remedy in future research, requiring baseline measures at diagnosis then follow up over time, possibly every 6 to 12 months. There would, however, have to be numerous illness measures as individual recovery would greatly differ and potentially confound findings. The same limitation and remedy can also be said of Study 2. It would be interesting to have a series of interviews with individuals throughout their rehabilitation to see if themes are more prominent at certain times or if themes differ throughout the course of rehabilitation. Another limitation is the use of self-report in terms of NYHA functional classification. As NYHA classification is based on estimates of functional impairment and symptom severity it is possible that individuals may over or under-estimate their classification. The addition of an objective measure of illness severity would have enhanced the current study. A final limitation results from the selection of predictor

variables. Following the design of this study a systematic literature review identified anxiety as a significant correlated variable with hope in chronic illness (Forster, 2012). Anxiety may therefore be an additional predictor of hope, or may help explain more variance in hope than the model in this study. Inclusion of anxiety as a variable in future research would be recommended.

A final consideration is potential tautology within the measure of hope itself. The HHI (Herth, 1992) includes questions about loneliness and memory for past events which could be seen as overlapping with social support and depression respectively. As such it could be that what was thought to be a measure of hope was in actuality a measure of other constructs. This does not however seem to be the case in the current study as the correlations between the HHI and the other measures, while significant, were of moderate strength at best. This suggests that whilst there may be some overlap, as is common with many psychometric measures, that the HHI is measuring a distinct construct that is different from the other measures in the study.

The generalisability of the findings is limited by two main factors. Firstly, the data collection method for Study 1 consisted of an online survey which was advertised through online heart support forums. While this did enable collection of data from a variety of diagnoses and residences, it was only open to those with internet access and more specifically to those who were already accessing online support forums. As such, the sample was self-selecting from an already engaged population. In future work it would be beneficial to attempt to include a wider range of participants recruited through many different means to ensure generalisability. It would also be interesting to see if there were differences between community and hospitalised patient groups. Secondly, the participants for Study 2, from whom the super-ordinate themes were generated, all had fairly high levels of hope, consequently the themes identified may not apply to

individuals who are not hopeful. Including a sample of low hope individuals into the IPA analysis would allow for the construction of super-ordinate themes to take into account a wider range of patient experience.

The current study has demonstrated that depression is inversely predictive of hope in individuals living with CVD. In addition, themes pertaining to the creation and maintenance of hope were identified from subjective experience. Thorough screening and early intervention for depression as well as the incorporation of promoting positive assets into rehabilitation programs, hope could be better fostered, with concomitant health benefits. Further longitudinal investigation is suggested to fully develop understanding of the processes involved and how they may change over time and illness course, which again may prove influential in informing cardiac care and rehabilitation.

References

- Amirkhan, J.H. & Greaves, H. (2003) Sense of coherence and stress: the mechanics of a healthy disposition. *Psychology and Health*, 18, 31-62. doi: 10.1080/0887044021000044233
- Antonovsky A. (1979). *Health, stress and coping*. San Francisco: Jossey-Bass.
- Bartley, M. (2006). *Capability and resilience: beating the odds*. University College London, London.
- Berendes, D., Keefe, F. J., Somers, T. J., Kothadia, S. M., Porter, L. S., & Cheavens, J. S. (2010). Hope in the context of lung cancer: Relationships of hope to symptoms and psychological distress. *Journal of Pain and Symptom Management*, 40(2), 174-182. doi: 10.1016/j.jpainsymman.2010.01.014
- BHF [British Heart Foundation] (2007). Cardiac rehabilitation: recovery or by-pass? Retrieved from <http://www.cardiacrehabilitation.org.uk/docs/scientific.pdf> on 2nd October 2010.
- BHF [British Heart Foundation] (2008). *Cardiovascular disease in Britain: Opportunities and Challenges over the next ten years*. Retrieved from http://www.bhf.org.uk/cvc/pdf/CVC_10Years_2008_v2.pdf on 24th March 2012.
- BHF [British Heart Foundation] (2010a). *Statistics on Mortality*. Retrieved from <http://www.bhf.org.uk/idoc.ashx?docid=58ce2f6a-a430-47d8-9947-2cad70536800&version=-1> on 24th March 2012.

- BHF [British Heart Foundation] (2010b). *Statistics on economic costs*. Retrieved from: <http://www.bhf.org.uk/idoc.ashx?docid=f22e6565-2f17-4841-b38b-3f145684fc76&version=-1> on 24th March 2012.
- Billington, E., Simpson, J., Unwin, J., Bray, D., & Giles, D. (2008). Does hope predict adjustment to end-stage renal failure and consequent dialysis? *British Journal of Health Psychology*, 13(4), 683-699. doi: 10.1348/135910707X248959
- Broadbent, E., Petrie, K. J., Main, J. & Weinman, J. (2006) The Brief Illness Perception Questionnaire. *Journal of Psychosomatic Research*, 60, 631-637. doi: 10.1016/j.jpsychores.2005.10.020
- Broadhead, W. E., Gehlbach, S. H., Van de Gruy, F. & Kaplan, B. H. (1988) The Duke-UNC Functional Social Support Questionnaire: Measurement of Social Support in Family Medicine Patients. *Medical Care*, 26 (7), 709-723. doi: 10.1097/00005650-198807000-00006
- Carr, A. & McNulty, M. (2006) *The Handbook of Adult Clinical Psychology: An evidence-based practice approach*. Routledge: Hove, East Sussex.
- Cheavens, J. (2000) Hope and Depression: Light through the Shadows. In C. R. Snyder (Ed) *Handbook of Hope: Theory, Measures and Applications* (p 321-340. San Diego: Academic Press.
- Chen, M. (2003). Pain and hope in patients with cancer - A role for cognition. *Cancer Nursing*, 26(1), 61-67. doi: 10.1097/00002820-200302000-00009
- Crothers, M., Tomter, H., & Garske, J. (2005). The relationships between satisfaction with social support, affect balance, and hope in cancer patients.

Journal of Psychosocial Oncology, 23(4), 103-118. doi:

10.1300/J077v23n04_06

Davidson, P. M., Dracup, K., Phillips, J., Daly, J. & Padilla, G. (2007) Preparing for the worst while hoping for the best – The relevance of hope in heart failure illness trajectory. *Journal of Cardiovascular Nursing*, 22 (3), 159-165.

Dufault K. & Martocchio, B. (1985). Hope: Its Spheres and Dimensions. *Nursing Clinics of North America*, 20(2), 379-391.

Eriksson, M. (2011) *Some salutogenic evidence on adolescent health and quality of life*. Retrieved from http://www.salutogenesis.fi/files/presentation_monica_eriksson.pdf on 14th April 2012.

Eriksson, M. & Lindström, B. (2006). Antonovsky's sense of coherence scale and the relation with health: a systematic review. *Journal of Epidemiology and Community Health*, 60(5), 376-381. doi: 10.1136/jech.2005.041616

Farone, D. W., Fitzpatrick, T. R., & Bushfield, S. Y. (2008). Hope, locus of control, and quality of health among elder latina cancer survivors. *Social Work in Health Care*, 46(2), 51-70. doi: 10.1300/J010v46n02_04

Forster, O. J. (2012) *Psychosocial Correlates of Hope in Chronic Physical Illness: A systematic literature review*. Unpublished manuscript, University of Hull, England.

Hare, D. L. (2010) Cardiac Depression Scale: Background and Administration Guide. *University of Melbourne: Melbourne*.

- Hare, D. L. & Davis, C. R. (1996) Cardiac Depression Scale: Validation of a new Depression scale for Cardiac Patients. *Journal of Psychosomatic Research*, 40 (4), 379-386. doi: 10.1016/0022-3999(95)00612-5
- Hart, K.E., Hittner, J.B. & Paras, K.C. (1991) Sense of coherence, trait anxiety and the perceived ability of social support. *Journal of Research Perspectives*, 25, 137-145.
- Herth, K. (1992) Abbreviated instrument to measure hope: development and psychometric evaluation. *Journal of Advanced Nursing*, 17, 1251–9. doi: 10.1111/j.1365-2648.1992.tb01843.x
- Lin, C. & Tsay, H. (2005) Relationships among perceived diagnostic disclosure, health locus of control, and levels of hope in Taiwanese cancer patients. *Psycho-Oncology*, 14, 376-385. doi: 10.1002/pon.854
- Lindstrom, B. & Eriksson, M. (2005). Salutogenesis. *Journal Epidemiological Community Health*, 59, 440–2. doi: 10.1136/jech.2005.034777
- Morgan, A. & Ziglio, E. (2007) Revitalising the evidence base for public health: an assets model. *Promotion and Education*, 14, 17.
- NICE [National Institute for Clinical Excellence] (2009) *Depression. The treatment and management of depression in adults (Update)*. Retrieved from <http://www.nice.org.uk/nicemedia/live/12329/45888/45888.pdf> on 14th April 2012.
- Parenteau, S., Gallant, S., Sarosiek, I., & McCallum, R. (2006). The role of hope in the psychological adjustment of gastropareutic patients receiving the gastric

- pacemaker: A longitudinal study. *Journal of Clinical Psychology in Medical Settings*, 13(1), 49-56. doi: 10.1007/s10880-005-9005-4
- Rustøen, T., Howie, J., Eidsmo, I & Moum, T. (2005) Hope in Patients hospitalized with Heart Failure. *American Journal of Critical Care*, 14 (5), 417-425.
- Scioli, A., Chamberlin, C. M., Samor, C. M., Lapointe, A. B., Campbell, T. L., & Macleod, A. R. (1997). A prospective study of hope, optimism, and health. *Psychological Reports*, 81, 723-733. doi: 10.2466/pr0.1997.81.3.723
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. London: SAGE.
- Snyder, C. R. (2002) Hope Theory: Rainbows In The Mind. *Psychological Enquiry*, 13 (4), 249-275. doi: 10.1207/S15327965PLI1304_01
- Staples, P., & Jeffrey, J. (1997). Quality of life, hope, and uncertainty of cardiac patients and their spouses before coronary artery bypass surgery. *Canadian Journal of Cardiovascular Nursing*, 8(1), 7-16.
- Tabachnik, B. & Fidell, L. S. (2007) *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.
- Valenti, L., Lim, L., Heller, R. F. & Knapp, J. (1996) An improved questionnaire for the assessing quality of life after acute myocardial infarction. *Quality of Life Research*, 5 (1), 151-161. doi: 10.1007/BF00435980
- Vellone, E., Rego, M. L., Galletti, C., & Cohen, M. Z. (2006). Hope and related variables in italian cancer patients. *Cancer Nursing*, 29(5), 356-366. doi: 10.1097/00002820-200609000-00002

- Wallston, K. A., Wallston, B. S., & DeVellis, R. (1978). Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.
- Wang, L., Chang, P., Shih, F., Sun, C., & Jeng, C. (2006). Self-care behavior, hope, and social support in taiwanese patients awaiting heart transplantation. *Journal of Psychosomatic Research*, 61(4), 485-491. doi: 10.1016/j.jpsychores.2004.11.013
- WHO [World Health Organisation] (2010). Cardiovascular Diseases. Retrieved from <http://www.who.int/mediacentre/factsheets/fs317/en/index.html> on 24th March 2012.
- Zimmerman, M. A. (1990). Toward a theory of learned hopefulness: A structural model analysis of participation and empowerment. *Journal of Research in Personality*, 24(1), 71-86. doi: 10.1016/0092-6566(90)90007-S

PART THREE:

Appendices

Appendix 1

Author guidelines for the journal 'Health Psychology Review'

This journal uses ScholarOne Manuscripts (previously Manuscript Central) to peer review manuscript submissions. Please read the guide for ScholarOne authors before making a submission. Complete guidelines for preparing and submitting your manuscript to this journal are provided below.

Introduction

Submission of a paper to *Health Psychology Review* will be taken to imply that it represents original work not previously published, that it is not being considered elsewhere for publication, and that if accepted for publication it will not be published elsewhere in the same form, in any language, without the consent of the editor and publisher.

Copyright and Author Rights

It is a condition of publication that authors assign copyright or license the publication rights in their articles, including abstracts, to Taylor & Francis. This enables us to ensure full copyright protection and to disseminate the article, and of course the Journal, to the widest possible readership in print and electronic formats as appropriate. Authors retain many rights under the Taylor & Francis rights policies, which can be found at <http://journalauthors.tandf.co.uk/preparation/copyright.asp>. Authors are themselves responsible for obtaining permission to reproduce copyright material from other sources.

Exceptions are made for certain Governments' employees whose policies require that copyright cannot be transferred to other parties. We ask that a signed statement to this effect is submitted when returning proofs for accepted papers.

Submission process

Manuscripts must be submitted by one of the authors of the manuscript. The submitting author is responsible for the article during the submission and peer review process.

To facilitate the review process *Health Psychology Review* accepts only online submissions. All submissions should be made online at *Health Psychology Review's* ScholarOne Manuscripts site. New users should first create an account. Once a user is logged onto the site submissions should be made via the Author Centre.

Preparation of manuscripts

Currently, *Health Psychology Review* can only accept manuscripts written in English. Manuscripts should be double-spaced and should be prepared in accordance with the format and style specified in the Publication Manual of the American Psychological Association (APA), Sixth Edition. Pages should be numbered consecutively and organized as follows:

The Title Page (p. 1) should contain the article title, authors' names and affiliations. It should also include an author note with authors' full affiliations and the address for manuscript correspondence (including e-mail, address and telephone and fax numbers). In accordance with the APA Publication Manual (6th Ed.). No information that would

indicate authors' identity or affiliation should be contained in the manuscript itself, all such information should be included on the title page only.

The Abstract (p. 2) must be a single paragraph that summarizes the main findings of the paper in fewer than 200 words. After the abstract a list of up to six keywords that will be useful for indexing or searching should be included.

Manuscript length

There is no formal word limit for manuscripts. Submissions should, however, be as long as necessary and authors of submissions of excessive length which do not convey ideas and points succinctly and concisely will be asked to truncate their manuscript. We also draw authors' attention to the Health Psychology Review online repository of supplemental materials that provides a permanently accessible resource of materials that are too long for the print version of the journal (e.g., oversized tables, intervention protocols, questionnaires etc.) but to which authors of articles appearing in Health Psychology Review wish readers to have access.

Style guidelines

The manuscript should follow the guidelines of the APA Publication Manual, Sixth Edition.

If you have any questions about references or formatting your article, please contact authorqueries@tandf.co.uk (please mention the journal title in your email).

Figures should be in a finished form suitable for publication and should be numbered consecutively with Arabic numbers in order of appearance in the text.

Tables should be numbered consecutively with Arabic numbers in order of appearance in the text. Type each table double-spaced on a separate page, with a short descriptive title typed directly above and with essential footnotes below.

Competing interests

A competing interest exists when your interpretation or presentation of information may be influenced by your personal or financial relationship with other people or organizations. Authors should disclose all financial and non-financial competing interests.

Authors are required to complete a declaration of competing interests and submit it together with the manuscript. All competing interests that are declared will be listed at the end of published articles. Where an author gives no competing interests, the listing will read 'The author(s) declare that they have no competing interests'. Please consider the following questions:

Financial competing interests

- In the past five years have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? Is such an organization financing this manuscript? If so, please specify.

- Do you hold any stocks or shares in an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future? If so, please specify.
- Do you hold or are you currently applying for any patents relating to the content of the manuscript? Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript? If so, please specify.
- Do you have any other financial competing interests? If so, please specify.

If you are unsure as to whether you, or one of your co-authors, has a competing interest please discuss it with the editorial office.

Authors' contributions

All authors are expected to have made substantive intellectual contributions to, and to have been involved in drafting or revising the manuscript. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship. With the submission of a manuscript, it is assumed that all authors have read and approved the final manuscript.

Acknowledgements

All contributors who do not meet the above criteria for authorship, should be listed in an acknowledgements section in accordance with the APA guidelines. The acknowledgements should be contained on the title page of the manuscript as making acknowledgements available to reviewers will compromise the masked peer-review process. Examples of those who might be acknowledged include those who provided general, technical, or writing assistance. Acknowledgement of funding/grants are also included in this section.

Proofs

The manuscript will be edited according to the style of the journal, and PDF proofs will be e-mailed to the corresponding author for final review. To avoid delay in publication, only necessary changes should be made, and corrections should be returned promptly.

Publication

Upon acceptance of an article, authors will be asked to transfer copyright to Taylor & Francis. This transfer will ensure the widest possible dissemination of information. A letter will be sent to the corresponding author confirming receipt of the manuscript. A form facilitating transfer of copyright will be provided after acceptance.

Reproduction of copyright material

As an author, you are required to secure permission to reproduce any proprietary text, illustration, table, or other material, including data, audio, video, film stills, and screenshots, and any supplementary material you propose to submit. This applies to direct reproduction as well as “derivative reproduction” (where you have created a new figure or table which derives substantially from a copyrighted source). The reproduction of short extracts of text, excluding poetry and song lyrics, for the purposes of criticism may be possible without formal permission on the basis that the quotation is reproduced accurately and full attribution is given.

For further information and FAQs, please see
<http://journalauthors.tandf.co.uk/preparation/permission.asp>

iFirst

Once an article has been accepted for publication, it is published in ***Health Psychology Review*** immediately as an “in press” or iFirst article. The paper will subsequently be published in both fully browseable web form, and as a formatted PDF.

Free article access

Corresponding authors will receive free online access to their article through our website, Taylor & Francis Online, and a complimentary copy of the issue containing their article. Reprints of articles published in this journal can be purchased through Rightslink® when proofs are received. If you have any queries, please contact our reprints department at reprints@tandf.co.uk.

iOpenAccess

Authors whose manuscripts have been accepted for publication in certain journals have the option to pay a one-off fee to make their article free to read online via the *Health, Psychology Review* website. Choosing this option also allows authors to post their article in an institutional or subject repository immediately upon publication.

Appendix 2

Data extraction form

Study Title	
Author(s) and Year of Publication	
Participant Characteristics	
Hope measure	
Psychosocial variables measures	
Reported <i>r</i> values	

Appendix 3

Quality assessment checklist (adapted from Khan, Riet, Popay, Nixon and Kleijnen, 2001; National Institute for Health and Clinical Excellence: The Guideline Manual, 2007; Downs and Black, 1998, STROBE Initiative, 2008)

1. Does the study have appropriate and clearly focused questions/aims?
2. Are the main outcomes mentioned in introduction or method sections?
3. Is there a clear conceptualisation/definition of hope?
4. Is the population representative and relevant?
5. Is the proportion of those who agreed to take part included?
6. Are population characteristics clearly described?
7. Are there clear inclusion/exclusion criteria?
8. Is the response rate reported?
9. Are the staff and places/facilities of care representative of care as usual?
10. Is the hope measure appropriate?
11. Are the psychometric properties reported?
12. If reported are they valid and reliable?
13. Are the main findings clearly described?
14. Is the data relevant to the review?
15. Are the limitations of the research acknowledged?

Appendix 4

Inter-rater reliability

Quality checklist assessment items																	
Author (year)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	Inter- rater
Alberto (2008)	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	12	.86
Chen (2003)	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	13	1.00
Hsu (2003)	1	1	0	1	0	1	1	0	1	1	0	1	1	1	0	10	.86
Staples (1997)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	1.00
Vellone (2006)	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	13	.73
Total	5	5	3	4	2	5	4	3	4	5	4	5	5	5	4	-	.89

Appendix 5

Hope measures employed by systematic literature review studies: characteristics, consistency and reliability

Measure	No. Questions	Question type	Minimum score	Maximum score	Consistency (alpha)	Reliability (r)
Herth Hope Index	12	4 point Likert	12	48	.97	.91
Miller Hope Scale	40	5 point Likert	40	200	.93	.82
Herth Hope Scale	30	4 point Likert	30	120	.94	.91
Snyder Trait Hope Scale	12	8 point Likert	8	96	.78	.82
Snyder State Hope Scale	6	8 point Likert	8	48	.84	.85
Nowotny Hope Scale	29	4 point Likert	29	116	.90	.81

Herth, K. (1991). Development and refinement of an instrument to measure hope. *Scholarly Inquiry for Nursing Practice*, 5 (1), 39-51.

Herth, K. (1992). Abbreviated instrument to measure hope: development and psychometric evaluation. *Journal of Advanced Nursing*, 17, 1251–9. doi: 10.1111/j.1365-2648.1992.tb01843.x

Miller, J. F. & Powers, M. J. (1988). Development of an instrument to measure hope. *Nursing Research*, 37 (1), 6-10. doi: 10.1097/00006199-198801000-00002

Nowotny, M. L. (1989). Assessment of hope in patients with cancer: development of an instrument. *Oncology Nursing Forum*, 16 (1), 57-61.

Snyder, C. R. (2000). Handbook of Hope: Theory, measures, and applications. San Diego: Academix Press Inc

Appendix 6

Quality assessment of included studies

	Clear and focused aims	Outcomes in intro of method	Clear definition of hope	Representative Population	Proportion agreed reported	Population characteristics	Inclusion/exclusion criteria	Response rate reported	Representative of care as usual	Hope measure appropriate	Psychometric properties	Valid and reliable	Main findings described	Findings relevant to review	Limitations Acknowledged	Total Quality Score
Study (first author, year)	Alberto (2008)	1	1	1	0	1	0	1	1	1	1	1	1	1	1	13
	Billington (2008)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
	Chen (2003)	1	1	0	1	1	1	1	1	1	1	1	1	1	1	13
	Crothers (2005)	1	1	1	0	1	0	0	1	1	0	1	1	1	1	11
	Fehring (1997)	1	1	0	1	1	0	0	1	1	1	1	1	1	0	10
	Felder (2004)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
	Footo (1990)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
	Frieson (1996)	1	1	1	0	1	0	0	1	1	1	1	1	1	1	12
	Gibson (2003)	1	1	1	0	1	1	0	1	1	1	1	1	1	1	12

Study (first author, year)	Clear and focused aims	Outcomes in intro of method	Clear definition of hope	Representative Population	Proportion agreed reported	Population characteristics	Inclusion/exclusion criteria	Response rate reported	Representative of care as usual	Hope measure appropriate	Psychometric properties	Valid and reliable	Main findings described	Findings relevant to review	Limitations Acknowledged	Total Quality Score
Herth (1989)	1	1	0	1	0	1	1	0	1	1	1	1	1	1	1	12
Hsu (2003)	1	1	0	1	0	0	1	0	1	1	0	1	1	1	0	9
Lin (2005)	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	14
Parenteau (2006)	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	11
Post-White (1996)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	14
Rustoen (2010)	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	12
Staples (1997)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Vellone (2006)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Wang (2006)	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	12
Zhang (2010)	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	13

Appendix 7

Guidelines for authors for the journal 'Health Psychology'

The page limit for research manuscripts is 25–30 pages. The page limit is inclusive of **all** parts of the manuscript, including the cover page, abstract, text, references, tables and figures.

Authors may request consideration of longer papers, in advance of submission, when there is clear justification for additional length (e.g., the paper reports on two or more studies or has an unusual or complex methodology).

Scholarly reviews and meta-analyses should not exceed 25 pages, but tables and references may be outside this page limit.

Brief reports are encouraged for innovative work that may be premature for publication as a full research report because of small sample size, novel methodologies, etc. Brief reports should be designated as such and should not exceed a total of 12 pages, inclusive of **all** parts of the manuscript, including the cover page, abstract, text, references, tables and figures.

All manuscripts should be double-spaced, with margins of at least 1 inch on all sides and a standard font (e.g., Times New Roman) of 12 points (no smaller).

Health Psychology considers letters concerning previously published articles. Letters should be no more than 500 words and have a maximum of five references.

Authors also have the option of placing supplemental materials online.

Submissions that exceed the page limits will be returned to the author for shortening prior to the initiation of peer review.

Submission Letter

The cover letter should indicate that the authors have read and followed the *Health Psychology* Instructions for Authors. It should also include a statement indicating that the paper has been seen and approved by all authors. The cover letter should describe how the paper advances research in health psychology, referring to the journal mission to assure that the submission fits with the types of papers published in *Health Psychology*.

The full mailing address, telephone, fax, and email address for the corresponding author should be included in the cover letter, along with the names and affiliations of all co-authors.

The cover letter must confirm that the manuscript has not been published, is not currently submitted elsewhere, and that it does not contain data that is currently submitted or published elsewhere.

When a manuscript contains data that is part of a larger study, authors should describe the larger study and provide references for other study papers. Authors must be prepared to provide copies of related manuscripts when requested as part of the editorial review process. Authors should clarify the relationship between their paper, including detailed specification of the overlap in participants, measures, and analysis, and others from the study. The value-added scientific contribution of their study must be clearly stated in the cover letter.

Authors of brief reports should indicate in the cover letter that the full report is not under consideration for publication elsewhere and similarly address potential overlap with other papers.

Manuscripts

The manuscript title should be accurate, fully explanatory, and no longer than 12 words. The title should reflect the content and population studied. If the paper reports a randomized clinical trial, this should be indicated in the title. The title of brief reports should start with the words "Brief Report".

The title page should include the names of all authors and their affiliations at the time the research was done. This information will be masked to ensure a blind peer review process by the editorial office. Authors should make sure that all other identifying information in the text of the paper is masked/removed prior to submission.

All manuscripts must include a structured abstract containing a maximum of 250 words with the following sections:

- Objective (brief statement of the purpose of the study);
- Methods (summary of the participants, design, measures, procedure);
- Results (primary findings); and
- Conclusions (specific statement of the implications of the data).

Please supply up to five keywords or brief phrases after the abstract. The Introduction should typically not exceed 3-4 pages in length. The paper should be referenced appropriately but excessive citations should be avoided.

All research involving human participants must describe oversight of the research process by the relevant Institutional Review Boards and should describe consent and assent procedures briefly in the Methods section.

All statistical tests should include effect size whenever possible.

First person language (“I”, “we”) should be avoided. Terminology should be sensitive to the individual who has a disease or disability. The journal endorses the concept of “people first, not their disability.” Terminology should reflect the “person with a disability” (e.g., children with diabetes, persons with HIV infection, families of people with cancer) rather than the condition as an adjective (e.g., diabetic children, HIV patients, cancer families). Nonsexist language should be used.

It is important to highlight the significance and novel contribution of the work. The translation of research into practice must be evidenced in all manuscripts. Authors should incorporate a meaningful discussion of the clinical and/or policy implications of their work throughout the manuscript, rather than simply providing a separate section for this material.

Health Psychology publishes a broad array of types of papers. Authors of qualitative and measure development papers should read the guidelines for these types of papers, noted below.

Qualitative Research

Research papers that utilize qualitative methods should follow the general instructions to authors for style and format. We ask that authors of qualitative papers review the additional guidance below to assure that papers meet the following criteria utilized by *Health Psychology*.

The introduction should make a compelling case for the significance of the study and clearly identify if the study is a stand-alone study or if it fits into a larger study. For example, qualitative manuscripts may inform the development of a survey, use small-incident samples, or establish feasibility. The specific qualitative paradigm should be specified (e.g., grounded theory, qualitative descriptive approach, interpretive phenomenology) with a rationale as to why it was selected to address the research question.

At the same time, authors are encouraged to avoid methodological tutorials and cite appropriate references for the methodology. Describe your sampling frame clearly and how the sample was selected, justifying the type and size of your sample using appropriate language for qualitative studies.

While many qualitative studies may not use a conceptual model, if you have done so, explain how the model may have shaped the design, data collection, analysis and interpretation. Explain carefully how you strengthened and insured rigor in your study e.g., data analysis protocols (including how coders were trained), audit procedures, and demonstration of data saturation. Describe the data analysis and how it relates to your overall approach or paradigm. Present rich and compelling results with data that have been analyzed and interpreted appropriately for your method (e.g., discourse analytic results would be presented differently than those of a grounded theory).

The paper should convey how this research fills an important gap in the science and promises to change the way we approach future studies.

Scale Development

Empirical papers related to the development of new instruments related to health psychology should follow the general guidelines for style and format of this journal. Authors should make a convincing case for the need and rationale for the new instrument, particularly with respect to new and innovative constructs. Included in this rationale should be the theoretical foundation on which their new instrument rests along with presentation of other, related scales currently in use.

It is important that the research have a degree of generalizability across populations and settings. Instruments that are more narrow in scope or of limited clinical utility may be better suited for subspecialty journals.

Authors should clearly articulate the specifics of the study design and of the analytical techniques used. There should be strong consistency among the purpose statements, methods, and the manner in which findings are presented.

An increasing number of studies are incorporating mixed-methods designs in their research. The specifics of these designs should be equally well-detailed without being excessive. Attention should be given to the nature of the items, the basis for their creation, and the rationale for the response options.

The underlying theoretical structure of the approach should be evident, for example, whether one is premising their study on classical or modern theory (IRT, Rasch) techniques. The characteristics of the research will be in part dictated by the nature of the scale. For instance, large, nationally-normed tests may have a much different make-up than that of small, more narrowly-defined measures. Research involving both types of instruments will be considered.

Finally, all instrument development papers should convey how the literature base will be strengthened with the addition of the particular instrument along with a clear and convincing case for the clinical relevance of the information that it provides.

Letters to the Editor

Health Psychology will, at the discretion of the Editor-in-Chief, publish Letters to the Editor on the journal website.

Letters should be prepared in direct response to articles published in the journal, should include reference to the published paper in the letter, and should be received through the Manuscript Submission portal within 60 days of the date when the relevant article is published in hard copy.

The text of the letter, excluding the title, references and author(s) name, title, affiliation and email, may not exceed 400 words.

In a separate cover letter, the author should indicate that the submission is a Letter to the Editor for consideration of posting on the *Health Psychology* website and provide the full citation of the original article to which the letter refers. The cover letter should also indicate if the letter writer(s) have any conflicts of interest related to the article or correspondence.

Masked Review Policy

Masked review is used. **Do not** include author information (addresses, phone numbers, electronic mail addresses, and fax numbers) in the manuscript.

Use of CONSORT Reporting Standards

All randomized controlled trials must include a diagram indicating participant flow into the study and a completed CONSORT checklist. CONSORT diagrams (and adaptations) should be included whenever possible to clarify the flow of participants through a study.

Appendix 8

Outline of positive psychology

“Positive Psychology is the scientific study of the strengths and virtues that enable individuals and communities to thrive. This field is founded on the belief that people want to lead meaningful and fulfilling lives, to cultivate what is best within themselves, and to enhance their experiences of love, work, and play.

Positive Psychology has three central concerns: positive emotions, positive individual traits, and positive institutions. Understanding positive emotions entails the study of contentment with the past, happiness in the present, and hope for the future.

Understanding positive individual traits consists of the study of the strengths and virtues, such as the capacity for love and work, courage, compassion, resilience, creativity, curiosity, integrity, self-knowledge, moderation, self-control, and wisdom.

Understanding positive institutions entails the study of the strengths that foster better communities, such as justice, responsibility, civility, parenting, nurturance, work ethic, leadership, teamwork, purpose, and tolerance.”

Positive Psychology Centre (2007) *Positive Psychology*. Retrieved from <http://www.ppc.sas.upenn.edu/> on 4th May 2012.

Appendix 9

List of forums/charities contacted for advertisement of Study 1

<http://www.mendedhearts.org/>
<http://womenheart.clinicahealth.com>
<http://www.heartcarecsg.co.uk>
<http://heart119.org>
<http://www.pacemakerclub.com/>
<http://www.livewiresni.org>
<http://www.healingwell.com/community/default.aspx?f=42>
<http://forums.about.com/ab-heartdisease/>
<http://www.healthboards.com/boards/forumdisplay.php?f=65>
<http://network54.com/Hide/Forum/31466>
http://groups.yahoo.com/group/p_atrial_fib
<http://groups.yahoo.com/group/GodBlessMVPSville>
http://groups.yahoo.com/group/mitral_valve
<http://health.groups.yahoo.com/group/CABGheartbypasssupport/>
<http://heartweb.co.uk/>
<http://www.heart2hearts.co.uk/>
<http://cardiacforum.org/forums/>
<http://www.medhelp.org/forums/Heart-Disease/show/114>
http://ehealthforum.com/health/heart_attack_symptoms.html
<http://www.heartboard.com/>
<http://www.revolutionhealth.com/forums/heart/coronary-artery-disease>
<http://forums.ivillage.com/t5/Heart-Health/ct-p/iv-bharrhythmia>
<http://upbeatheartsupport.org.uk/>
<http://www.heartsupportgroup.co.uk/>
<http://www.dailystrength.org/c/Coronary-Heart-Disease/support-group>
<http://www.heartpatients.com/>
<http://community.bhf.org.uk/forum>

Appendix 10

Online advertisement for Study 1

Hope and Heart Disease.

Hope has been found to be an important predictor in the course of Heart Disease, but it is currently unknown what contributes to feelings of hope in people living with Heart Disease. I am conducting a research study as part of my Doctorate in Clinical Psychology at the University of Hull into just what these contributors are. The long-term goal is to incorporate any findings into cardiac rehabilitation to foster hope and well-being.

The study consists of a number of questionnaires which should take around 20 minutes to complete. If you wish to undertake the study please could you go to <https://www.surveymonkey.com/s/hopeandheart> and complete the survey. More information is available before the questionnaires which should hopefully answer any further questions you may have. Your time is greatly appreciated and you could be helping to improve the experiences of others living with heart disease!

Many thanks,

Owen Forster

Chief Investigator

o.forster@2009.hull.ac.uk

Appendix 11

Ethical Approval Letter

Removed for hard binding.

Appendix 12

Information sheet for Study 1



Patient Information Sheet: Questionnaire Component

We would like to invite you to take part in a research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. Please read this information carefully. If you have any questions that are not answered below please contact us before continuing.

What is the purpose of the study?

We are investigating what factors predict feelings of hope in individuals living with heart disease. It has been already found that higher levels of hope lead to lower mortality, but it is unknown what factors predict higher hope. If such factors were known then Cardiac rehabilitation programs could include a focus on these factors to hopefully foster feelings of hope in individuals living with heart disease.

This study aims to find what those factors are. This study is being undertaken for educational purposes, as part of my doctorate in Clinical Psychology at the University of Hull. In addition, the results will be fed back to Humber Foundation Trust who may choose to publish the results in their own publications. It is also hoped that the results will be published in international journals and presented at conferences.

Why have I been invited?

You have been invited to take part because you are currently living with heart disease so we are interested in your experiences of hope and other factors.

What will I be asked to do?

You will be asked to complete a number of questionnaires concerning hope, depression, quality of life, social support, illness perception and control. They should take around 20 minutes to complete.

Who can take part in the study?

Not everyone living with heart disease is eligible to take part in the study. For inclusion in the study please ensure you meet the following criteria:

- Must be currently living with a diagnosis of Heart Disease (This could be any type including coronary heart disease, heart attack, angina, cardiovascular disease, congestive heart failure, arrhythmia, cardiomyopathy etc.)
- Over the age of 18.
- No diagnosis of congenital heart disease (being born with a heart condition).

- No diagnosis of a serious mental health problem (this does not include anxiety or depression or any difficulties that have NOT needed psychological therapy).
- No diagnosis of other serious on-going medical conditions (such as arthritis, diabetes or cancer).
- Non-English speaking (All the questionnaires are available in English only).

Do I have to take part and what if I change my mind?

No, it's up to you to decide to join the study; no-one will know if you decide to take part in the study or not. If you agree to take part in this survey, you may discontinue at any time by clicking on the 'discontinue' button shown on every page. If you discontinue your responses will not be saved and will not be used in the study. As the data is anonymous, once the survey has been submitted it cannot be withdrawn.

Will my taking part in this study be confidential?

No personally identifiable information will be collected during this study and survey monkey will not save your computer's IP address. Therefore, we cannot trace your responses back to you and all data collected will be anonymous. Any information collected will be stored for up to a year after the completion of the study to allow for analysis, but will be destroyed thereafter.

Potential Risks

Some people may become distressed when completing this survey. If you do, you can discontinue at any time and your data will not be stored or used in the study. At the end of the survey (or if you decide to discontinue) a screen will be presented containing helpful resources, websites and contact numbers if you feel you need some support or further information. This information can also be found at the end of the paper version.

Can I find out my results or what they mean?

Since data will be collected anonymously we are not able to let you know your scores. At the end of the survey (or if you decide to discontinue) there will be a screen containing a link to a website where you can complete part of the questionnaire again and find out how to score and interpret your own responses.

Expenses and payments

You will not be paid for taking part in the study and you cannot claim any expenses.

What are the possible benefits of taking part?

We cannot promise this study will help you but it may raise your awareness of your experiences of hope in relation to heart disease. The information we obtain from this study may help to understand what influences experiences of hope in individuals living with heart disease and may therefore benefit other people living with heart disease.

Who has reviewed this study?

This study has been reviewed by the County Durham & Tees Valley Research Ethics Committee. It has also been peer reviewed by the research team at the Department of Clinical Psychology and Psychological Therapies at the University of Hull and is being sponsored by Humber Foundation Trust Research and Development.

Further information and contact details

The research is organised by Owen Forster, a trainee Clinical Psychologist employed by Humber Foundation Trust and training at the University of Hull. If you have a concern about any aspect of this study, or wish to ask any further questions you should contact him by email: o.forster@2009.hull.ac.uk

Appendix 13

Consent form for Study 1



CONSENT FORM

Title of project: Predictors of Hope in Heart Disease

Name of Researcher: Owen Forster

Please tick the box

1. I confirm that I have read and understand the information sheet dated 07 March 2010 ¹ (version 1.2), for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	<input type="checkbox"/>
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any medical care or legal rights being affected.	<input type="checkbox"/>
3. I understand that once I have submitted the survey it is not possible for my responses to be withdrawn since all the data is anonymous.	<input type="checkbox"/>
4. I understand that data collected during the study may be looked at by individuals from the University of Hull, from regulatory authorities or from the NHS Trust, where it is relevant to their taking part in this research. I give permission for these individuals to have access to the data.	<input type="checkbox"/>
5. I am aware of the potential risks and benefits of taking part.	<input type="checkbox"/>
6. I agree to take part in the above study	<input type="checkbox"/>

Appendix 14

Internet survey questions converted to text format

Demographic Information

Please could you answer the following questions.

The information gathered here will not enable yourself to be identified by anyone involved with the study. Your responses will remain anonymous.

1. How old are you?
2. Sex
 - ☐ Male
 - ☐ Female
3. In which country do you currently live?
4. Ethnicity
5. Which heart related diagnoses have you received?
6. How many months has it been since you received your first diagnosis?
7. Which of the following options would best describe your current experience of your diagnosis?
 - ☐ No symptoms and no limitation in ordinary physical activity e.g. shortness of breath when walking, climbing stairs etc.
 - ☐ Mild symptoms (mild shortness of breath and/or angina) and slight limitations during ordinary activity)
 - ☐ Marked limitations in activity due to symptoms, even during less-than-ordinary activity e.g. walking short distances (20-100m). Comfortable at rest.
 - ☐ Severe limitations. Experiences symptoms even when at rest. Mostly bedbound.
8. Have you any experience of friends and/or relatives living with heart disease?
 - ☐ Yes
 - ☐ No

Herth Hope Scale: Removed for hard binding.

Cardiac Depression Scale: Removed for hard binding.

Illness Perception Questionnaire: Removed for hard binding.

MacNew Health Related Quality of Life Questionnaire: Removed for hard binding.

Multidimensional Health Locus of Control Scale: Removed for hard binding.

Duke-UNC Functional Social Support Questionnaire: Removed for hard binding.

Appendix 15

Information sheet for Study 2



Patient Information Sheet: Interview Component

We would like to invite you to take part in a research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. Please read this information carefully. If you have any questions that are not answered below please contact us before continuing.

What is the purpose of the study?

We are investigating what factors predict feelings of hope in individuals living with heart disease. It has been already found that higher levels of hope lead to lower mortality, but it is unknown what factors predict higher hope. If such factors were known then Cardiac rehabilitation programs could include a focus on these factors to hopefully foster feelings of hope in individuals living with heart disease.

This study aims to find what those factors are. This study is being undertaken for educational purposes, as part of my doctorate in Clinical Psychology at the University of Hull. In addition, the results will be fed back to Humber Foundation Trust who may choose to publish the results in their own publications. It is also hoped that the results will be published in international journals and presented at conferences.

What will I be asked to do?

If you decide to take part then upon making contact with the researcher they will arrange with you a time for the researcher to come and interview you. The interview will last approximately 45 minutes and will cover a variety of topics around hope and heart disease. You may also, if you wish to, be asked to participate in the interpretation of the findings, but that will be discussed at time of interview.

Who can take part in the study?

Not everyone living with heart disease is eligible to take part in the study. For inclusion in the study please ensure you meet the following criteria:

- Must be currently living with a diagnosis of Heart Disease (This could be any type including coronary heart disease, heart attack, angina, cardiovascular disease, congestive heart failure, arrhythmia, cardiomyopathy etc.)
- Over the age of 18.

- No diagnosis of congenital heart disease (being born with a heart condition).
- No diagnosis of a serious mental health problem (this does not include anxiety or depression or any difficulties that have NOT needed psychological therapy).
- No diagnosis of other serious on-going medical conditions (such as arthritis, diabetes or cancer).
- Non-English speaking

Do I have to take part and what if I change my mind?

No, it's up to you to decide to join the study; no-one will know if you decide to take part in the study or not. If you agree to take part then the researcher will arrange with you a time that is convenient with you to participate in the interview, at a location of your choosing. If you change your mind about taking part, either before or after interview, then all information about yourself will be removed from the research study.

Will my taking part in this study be confidential?

Due to the nature of the interview some potentially identifiable may be included. All interviews will be recorded by the researcher and then transcribed. During the transcription process pseudonyms will be used to ensure anonymity. Once transcription has taken place the original recordings will be destroyed. Any information will be kept for a maximum of 12 months. Additionally, it is necessary that your GP is informed of your participation in the study. GPs will only be made aware that you have participated in a research interview regarding heart disease and experiences of hope. No other information will be provided to your GP.

Potential Risks

Some people may become distressed when completing the interview. If you do, please inform the interviewer. You are also free to withdraw at any time, with no penalty or consequence, and all your data will be removed from the study. At the end of the interview the researcher will provide information on helpful resources, websites and contact numbers if you feel additional support.

What are the possible benefits of taking part?

We cannot promise this study will help you but it may raise your awareness of your experiences of hope in relation to heart disease. The information we obtain from this study may help to understand what influences experiences of hope in individuals living with heart disease and may therefore benefit other people living with heart disease.

Can I find out my results or what they mean?

A number of interviews are being carried out, and all responses looked at collectively with the aim of finding common experiences among numerous individuals. As such individual results will not be produced. However, if you wish to receive a copy of the completed results please inform the researcher.

Expenses and payments

You will not be paid for taking part in the study and you cannot claim any expenses.

Who has reviewed this study?

This study has been reviewed by the County Durham & Tees Valley Research Ethics Committee. It has also been peer reviewed by the research team at the Department of Clinical Psychology and Psychological Therapies at the University of Hull and is being sponsored by Humber Foundation Trust Research and Development.

Further information and contact details

The research is organised by Owen Forster, a trainee Clinical Psychologist employed by Humber Foundation Trust and training at the University of Hull. **If you wish to take part in the study please contact Owen Forster to arrange a time and place for the interview to happen. His contact details are:**

Email: o.forster@2009.hull.ac.uk Telephone: 07904 302 319

If you are interested in helping further, a questionnaire study is being run alongside the interview study. If you would like to complete the questionnaire study please go to <https://www.surveymonkey.com/s/hopeandheart> where you will find more information and the questionnaires.

Appendix 16

Consent form for Study 2

Participant Identification number for this study:

Pseudonym:

CONSENT FORM

Title of project: Predictors of Hope in Heart Disease



Name of Researcher: Owen Forster

Please initial the box

1. I confirm that I have read and understand the information sheet dated 07 March 2011 (version 1.2), for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	<input type="checkbox"/>
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any medical care or legal rights being affected.	<input type="checkbox"/>
3. I understand that that at any point should I wish to withdraw my participation my data will be removed from the present study and it will be destroyed.	<input type="checkbox"/>
4. I understand that data collected during the study may be looked at by individuals from the University of Hull, from regulatory authorities or from the NHS Trust, where it is relevant to their taking part in this research. I give permission for these individuals to have access to the data.	<input type="checkbox"/>
5. I am aware of the potential risks and benefits of taking part.	<input type="checkbox"/>
6. I consent to the interview being audio recorded by the researcher, and for the recording to be transcribed using a pseudonym.	<input type="checkbox"/>
7. I consent for my GP to be informed of my participation in the research study.	<input type="checkbox"/>
8. I agree to take part in the above study	<input type="checkbox"/>

Name of participant

Date

Signature

Person taking consent

Date

Signature

Appendix 17

Interview schedule

Predictors of hope in heart disease: Semi-structured interview schedule

Information gathering

Demographic information: age, sex, ethnicity.

Diagnosis, disease severity and time since diagnosis

Previous experiences of heart disease

Hope

What have been your experiences of hope since your diagnosis?

Could you tell me if you have experienced hope, or not feeling hopeful, in relation to your illness?

Have your feelings of hope changed over time? If so, how?

Can you talk about a time you have felt particularly hopeful in regards to your illness?

And how about a time when you did not feel hopeful?

Depression

Have you had times that you've experienced low mood and has this affected any experiences of hope you have had?

Have there been times when you've felt low/sad/depressed, and if so could you discuss them?

How did any changes in your mood been relate to feelings of hope you were/are having?

Illness Perception

How do you see your illness and has this affected any experiences of hope you have had?

Has your perception of your illness changed over time? If so, has this affected any experiences of hope you've had?

Quality of life

How would you rate your current quality of life and has this affected any experiences of hope you have had?

Has your quality of life been changeable since your diagnosis? Have there been times where things have been better or worse, and could you talk about these times?

Have any changes in your quality of life affected any experiences of hope you've had?

Locus of control

How in control of your illness do you feel and has this affected any experiences of hope you have had?

Where would you say the control lay? With you or with other people, and that could include medical professionals as well?

Has there been any change over time in who has been in control of your illness? If so, has this had any impact on any experiences of hope you've had?

Social support

What have been your experiences of receiving support from people you know and has this affected any experiences of hope you have had?

Has this support been consistent or has it changed over time?

Have your experiences of support from those around you had any relation to any feelings of hope you were/are having?

Other

Are there any other areas apart from those already discussed that you feel have had an impact on your experiences of hope?

How have these affected your experience of hope?

Has this been consistent over time or has it been variable?

Appendix 18

Linear regression output

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	NYAA ^a		. Enter
2	LoCChance, LoCInternal, SocialSup, Depression, QoL, IllnessP ^a		. Enter

a. All requested variables entered.

b. Dependent Variable: Hope

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209 ^a	.044	.035	4.794
2	.719 ^b	.517	.485	3.502

a. Predictors: (Constant), NYAA

b. Predictors: (Constant), NYAA, LoCChance, LoCInternal, SocialSup, Depression, QoL, IllnessP

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.014	1	115.014	5.004	.027 ^a
	Residual	2528.093	110	22.983		
	Total	2643.107	111			
2	Regression	1367.377	7	195.340	15.924	.000 ^b
	Residual	1275.730	104	12.267		
	Total	2643.107	111			

a. Predictors: (Constant), NYAA

b. Predictors: (Constant), NYAA, LoCChance, LoCInternal, SocialSup, Depression, QoL, IllnessP

c. Dependent Variable: Hope

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	40.938	1.217		33.628	.000
	NYAA	-1.264	.565	-.209	-2.237	.027
2	(Constant)	38.002	5.915		6.425	.000
	NYAA	.926	.529	.153	1.751	.083
	Depression	-.128	.030	-.602	-4.253	.000
	IllnessP	.045	.062	.116	.736	.463
	QoL	.809	.596	.185	1.358	.178
	LoCInternal	.089	.057	.116	1.567	.120
	LoCChance	-.023	.058	-.029	-.389	.698
	SocialSup	.660	.480	.114	1.376	.172

a. Dependent Variable: Hope

Appendix 19

Worked example of Interpretive Phenomenological Analysis: Creation of themes

A section of transcript from one participant is shown here to illustrate each stage of the IPA process. This is an excerpt from a male participant who has undergone a triple bypass operation 2 years prior to interview.

Extract of transcript:

What about after the operations? How were you feeling then, emotionally?

Erm, emotionally, erm, well, I said to you, you know, during the first four weeks or so I was thinking, "is this it? is this the best I'm gonna get? Am I ever going to better than this?" And that was like, that was not a particularly pleasant feelings, thinking that was going to be me for the rest of my days, because of my heart. So, that was a bit of a depression. A bit of a downer was that one. Erm, but yeah, the thing was, I don't know, I'm used to cuts and bruises and breaks in life, but you can see your progress on a day to day thing with cuts and bruises and things like that. But with this, there was no, it was like, the progress was that slow, it was like, sometimes it wasn't even on a week to week basis, like a fortnightly basis, you know. It was like a fortnight before you start, before I start to felt that much better than that, you know. It was like progress was that slow, so so slow. And it was, erm, not a pleasant time to tell you the truth.

Did your mood lift as you improved?

Yeah, it did yeah. Yeah. Oh yeah. That's sort of like, erm, went hand in hand with how you're feeling when you're not very well. You're not much of a fun person to be around are you? But when you start improving and that, your smile comes back, and you start telling jokes again

and things like that, you know. And you know you're on your way. I know I'm not fully recovered yet, but I feel a lot better than I did four months ago.

Is it helpful to look back and see the distance?

Yeah. I mean my partner is lovely, she keeps, you know, I keep saying to her "I should be doing this. I should be back playing golf and fishing" and she says, she just says, "Just slow down, just slow it down, slow it down", you know. Erm, I want things to happen quicker than my body is letting me, and erm, she's telling me to slow down. It's all a bit of a strange thing, but I'm getting there.

What has been your experience of receiving support from people around you?

From around me, yeah, oh yeah. My partner, family and that. It's been really good. From the health service, haha, don't even ask me about that!. There just isn't any. There is nothing.

So it was up to the people around you to give the support then?

Yeah, yeah.

How was that for you? Was it good support?

Yeah, really good, yeah. But from, I mean, I got to thinking, if I'd not been, or somebody else who, you know, in my situation regarding the operation and that, had not had the support that I had, I was thinking, "how would they have coped?" you know. I tell you, they wouldn't have coped very well.

Stage One Analysis

Transcripts were read twice to facilitate understanding of the whole text.

Stage Two Analysis

The researched noted statements on topics of interest, contradictions, similarities and use of language. Stage Two was also completed by a Trainee Clinical Psychologist (female, 4 transcripts).

	What about after the operations? How were you feeling then, emotionally?
Asking difficult questions of self.	Erm, emotionally, erm, well, I said to you, you know, during the first four weeks or so I was thinking, "is this it? IS this the best I'm gonna get? Am I ever going to better than this?" And that was like, that was not a particularly pleasant feelings, thinking that was going to be me for the rest of my days, because of my heart. So, that was a bit of a depression. A bit of a downer was that one. Erm, but yeah, the thing was, I don't know, I'm used to cuts and bruises and breaks in life, but you can see your progress on a day to day thing with cuts and bruises and things like that. But with this, there was no, it was like, the progress was that slow, it was like, sometimes it wasn't even on a week to week basis, like a fortnightly basis, you know. It was like a fortnight before you start, before I start to felt that much better than that, you know. It was like progress was that slow, so so slow. And it was, erm, not a pleasant time to tell you the truth.
Negative outlook	
Remembering past recovery/strength.	
Comparing past and present.	
Recognising a different timescale.	
Recognising small steps towards recovery.	
Enduring unpleasantness.	
	Did your mood lift as you improved?
Getting back to normal.	Yeah, it did yeah. Yeah. Oh yeah. That's sort of like, erm, went hand in hand with how you're feeling when you're not very well. You're not much of a fun person to be around are you? But when you start improving and that, your smile comes back,

<p>Socialising returning to normal. Humour. Realising recovery is a long term process. Recognising recovery.</p> <p>Family support.</p> <p>Wanting to be active.</p> <p>Other's remembering limits. Trusting that she is looking out for him.</p> <p>Recovery.</p> <p>Family support.</p> <p>Let down by health service.</p> <p>Wanting experts.</p> <p>Relying upon family when times are difficult.</p> <p>Seeing situation for what it is. Knowing what needs are.</p>	<p>and you start telling jokes again and things like that, you know. And you know you're on your way. I know I'm not fully recovered yet, but I feel a lot better than I did four months ago.</p> <p>Is it helpful to look back and see the distance?</p> <p>Yeah. I mean my partner is lovely, she keeps, you know, I keep saying to her "I should be doing this. I should be back playing golf and fishing" and she says, she just says, "Just slow down, just slow it down, slow it down", you know. Erm, I want things to happen quicker than my body is letting me, and erm, she's telling me to slow down. It's all a bit of a strange thing, but I'm getting there.</p> <p>What has been your experience of receiving support from people around you?</p> <p>From around me, yeah, oh yeah. My partner, family and that. It's been really good. From the health service, haha, don't even ask me about that! There just isn't any. There is nothing.</p> <p>So it was up to the people around you to give the support then?</p> <p>Yeah, yeah.</p> <p>How was that for you? Was it good support?</p> <p>Yeah, really good, yeah. But from, I mean, I got to thinking, if I'd not been, or somebody else who, you know, in my situation regarding the operation and that, had not had the support that I had, I was thinking, "how would they have coped?" you know. I tell you, they wouldn't have coped very well.</p>
---	--

Stage Three Analysis

Emerging themes (including the researchers and colleagues interpretations, were documented in the right hand margin.

	<p>What about after the operations? How were you feeling then, emotionally?</p>	
Asking difficult questions of self.	Erm, emotionally, erm, well, I said to you, you know, during the first four weeks or so I was thinking, "is this it? IS this the best I'm gonna get? Am I ever going to better than this?" And that was like, that was not a particularly pleasant feelings, thinking that was going to be me for the rest of my days, because of my heart. So, that was a bit of a depression. A bit of a downer was that one. Erm, but yeah, the thing was, I don't know, I'm used to cuts and bruises and breaks in life, but you can see your progress on a day to day thing with cuts and bruises and things like that. But with this, there was no, it was like, the progress was that slow, it was like, sometimes it wasn't even on a week to week basis, like a fortnightly basis, you know. It was like a fortnight before you start, before I start to felt that much better than that, you know.	
Negative outlook	It was like progress was that slow, so so slow. And it was, erm, not a pleasant time to tell you the truth.	
Remembering past recovery/strength.		Perspective/knowledge: recognising recovery.
Comparing past and present. Recognising a different timescale.		Perspective/knowledge: Timescales
Recognising small steps towards recovery.		Perspective/knowledge: recognising recovery
Enduring unpleasantness.	<p>Did your mood lift as you improved?</p> <p>Yeah, it did yeah. Yeah. Oh yeah. That's sort of like, erm, went hand in hand with</p>	Inner resources: mental strength

Getting back to normal.	how you're feeling when you're not very well. You're not much of a fun person to be around are you? But when you start improving and that, your smile comes back, and you start telling jokes again and things like that, you know. And you know you're on your way. I know I'm not fully recovered yet, but I feel a lot better than I did four months ago.	Environment: social consistency.
Socialising returning to normal. Humour.		Inner resources: mental strength/staying active.
Realising recovery is a long term process.	Is it helpful to look back and see the distance?	Perspective/knowledge: recognising recovery.
Recognising recovery.		
Family support.	Yeah. I mean my partner is lovely, she keeps, you know, I keep saying to her "I should be doing this. I should be back playing golf and fishing" and she says, she just says, "Just slow down, just slow it down, slow it down", you know. Erm, I want things to happen quicker than my	Environment: family support.
Wanting to be active.	body is letting me, and erm, she's telling me to slow down. It's all a bit of a strange thing, but I'm getting there.	Inner resources: staying active, adaptability.
Other's remembering limits. Trusting that she is looking out for him.		Perspective/knowledge; knowing your limits, congruence of needs, recognising recovery.
Recovery.	What has been your experience of receiving support from people around you?	Inner resources: trusting in others.
	From around me, yeah, oh yeah. My partner, family and that. It's been really good. From the health service, haha, don't even ask me about that! There just isn't any. There is nothing.	
Family support.		
Let down by health service. Wanting	So it was up to the people around you to	Environment: family

experts.	<p>give the support then?</p> <p>Yeah, yeah.</p> <p>How was that for you? Was it good support?</p> <p>Yeah, really good, yeah. But from, I mean, I got to thinking, if I'd not been, or somebody else who, you know, in my situation regarding the operation and that, had not had the support that I had, I was thinking, "how would they have coped?" you know. I tell you, they wouldn't have coped very well.</p>	support
<p>Relying upon family when times are difficult.</p> <p>Seeing situation for what it is. Knowing what needs are.</p>		<p>Environment: family support</p> <p>Perspective/knowledge: congruence of needs, seeing the big picture.</p> <p>Inner resources: trusting others, mental strength.</p>

Stage Four Analysis

Quotes from all participants' transcripts were grouped into relevant themes to establish comparisons. Emerging themes were with colleagues and two participants. This provided peer and member validation for the emerging themes.

Emerging Theme	Supporting Quotes
Mental Strength	<p>"if you let that [the head] go, then that's dead [the heart]"</p> <p>"I won't be beat"</p>
Taking control	<p>"it's down to people to decide for themselves what to do"</p>

Trusting other people	"give my body over to the doctor and let him deal with it...I did that"
	"you just place your trust in their hands"
Staying active	"I still carried on with what I was doing e.g. golfing, gardening, walking..."
Adaptability	"I had to take time off work...but I carried on strong"
	"I've got more confident...I don't stand back and wait"
	"if it's very cold at the football I have to get double wrapped up now"
Family support	"they've always been there for you"
Using experts	"I'm doing what the doctors tell me"
	"you get the information from the specialist about...what you can do"
Social consistency	"they never stopped inviting me"
Positive modelling	"I had one [a heart attack] three years ago" and with that he shoved a boiler on his back and I thought "oh well!"
Knowing limits	"I'm sensible in what I can and cannot do"
Timescale	"just got to realise that it does take time...which I didn't realise at the time"
Congruence of needs	"I'd say "a little further" and the wife would say "now, you've got to get back", it's a good reminder"
Seeing a bigger picture	"it's a hazard of life. A bump in the road, that's all"
Recognising recovery	"I was able to walk a bit further and when I could drive. It was all milestones on the way to recovery"

Stage Five Analysis

Connections between themes were made across transcripts to develop super-ordinate themes. These were then compared to transcripts and themes were included if they were present in over half of the sample.

Appendix 20

Reflective statement

Introduction

This is a statement reflecting upon the research process, from formulation of research questions and systematic literature review through to completion of the empirical study with its quantitative and qualitative components. I aim to give a personal account of this process as well as allowing reflection upon decisions made and knowledge gained.

Formulation of a research question

The idea to undertake health psychology research was not my own. When I was given the chance to choose a research direction at the beginning of the process I chose to undertake research into bipolar disorder. Unfortunately, shortly after the commencement of this my supervisor retired and it was judged to be better to start afresh. At this stage I had already formulated some ideas about looking at positive concepts so these were carried over to look at the field of health psychology. This was an incredibly broad starting position, so I sought to narrow down the scope of the project. My supervisor suggested that heart conditions might be a good place to start, as they are generally less researched than cancer and palliative diseases.

With this in mind, I began looking into positive aspects of health in people living with cardiac illness. I began searching quite widely, and in this process happened upon a study which grabbed my interest. A literature review of qualitative studies found that hope was a significant factor in illness trajectory (Davidson, Dracup, Phillips, Daly & Padilla, 2007). Immediately, I sought to explore hope in heart disease more fully, expecting a wealth of literature. What I discovered was simultaneously disappointing and galvanising. I could only find a small handful of studies that investigated hope in

cardiac illness, with little coherent direction between them. As a result, the first question that came to mind was the one that ended up being born out in the research, what makes people hopeful?

Choice of methodology

The choice to use quantitative methods was a simple one. I was looking for statistical predictors and I am comfortable with questionnaires and numbers. The inclusion of qualitative methodology primarily emerged through conversations within the department. Every person I talked to had a different concept of hope, and felt that this would possibly apply to my research population as well. The means to get to these individuals beliefs was through the use of interviews. I was somewhat apprehensive that this would mean extra work but felt confident that it would allow a much better analysis and understanding of the topic, which I feel now it did.

Systematic Literature Review

I approached my systematic literature review somewhat cautiously. I have never conducted a review and was aware that it was necessary to include all studies in a defined area. As a result a rather lengthy period was spent searching, refining and reading as I was determined to ensure that no stone was left unturned. While this was a time consuming process, it also allowed me to immerse myself in the literature which was very helpful when it came to discussing the findings of the review.

If I were to conduct another review, which is something that happily does not fill me with dread, I think I would still adopt a thorough approach but maybe that it would be less stressful for me to do so. With hindsight, I would also prefer to be researching a term that unlike 'hope', is not used in common parlance and therefore results in thousands of search results.

The review was written for Health Psychology Review. This was not only because the journal has a good impact factor but also because unlike many other journals it does not have a word limit on reviews. I found this attractive because while intent on writing a concise piece the sense of not having a fixed ending allowed me to fully and freely explore discursive thinking.

Ethics

My progress through ethics was a very different one from many of my peers. I initially approached Proportionate review. My study was not deemed appropriate for this, but in a fortunate twist, the organiser of the proportionate review was able to get my study reviewed by a full ethical committee within the week. While this was positive in terms of timescale, it meant I was unable to attend my committee due to existing commitments. At it turned out there were only a few alterations required to the study but it is one regret that during the research process I did not receive the experience of attending a REC meeting.

Empirical Study

I remember having some apprehension about researching into hope. I think knowing that I would potentially be encountering people who were not very hopeful about their illness and their future was something that I found difficult. In retrospect, this was not the case however, with all the individuals I met along my journey being hopeful and enthusiastic, which was certainly something which helped. Reflecting on my own feelings of hope there were times throughout the research where my own feelings of hope were quite low, especially in regards to recruitment. When looking at the themes that came through in study 2 I can definitely identify that seeing the big picture and recognising progress as being things that helped me rediscover hope in times of difficulty. I think by understanding the processes behind hope, and going through them

myself, has given me great insight in how people approach their difficulties and this is something I will be taking with me into my clinical work.

Epistemological Statement

This study is based on the premise that truth can exist in many forms, and the truth that you discovered will depend on your approach towards truth. As such, this study took two different approaches to discovering the truth. Statistical methods will produce a version of the truth that is replicable, but that is limited by both the variables investigated and the analysis conducted. Qualitative methods will not produce a replicable version of the truth, it will be hugely affected by those interviewed and by those carrying out the analysis. It will, however, produce a truth that is less limited by the questions asked as there is space for individuals to fill in gaps with their own truth. I recognise that this approach has left great space for contradiction and disagreement in truths, but by doing so will allow more truths to become evident.

Study 1

Finding relevant measures for the variables was not difficult, but finding brief measures was more of a challenge. I was keen that questionnaires be as brief as possible due to the number of variables, whilst still being valid. Thankfully, brevity was an approach already favoured by researchers in CVD, so it was possible to identify brief measures through examination of the existing literature.

I encountered a dilemma when it came to sample size calculations. If I were to include every subscale of the selected questionnaires my sample size would have been incredibly difficult to achieve. I therefore made the decision to use the overall scales from the chosen questionnaires (with the exception of the MHLoC which does not have one). Whilst this somewhat limited the exploratory nature of the study, it did allow for

focused analysis and discussion of the predictors. In regards to methodology I was aware of the inherent self-selecting bias. Those viewing the advertisement were already participating in online discussions about their illnesses so were potentially not representative of the population as a whole. However, I feel that because the results were able to be understood in the context of subjective experience from those in Study 2 that I am comfortable that the results are valid.

Study 2

Having never conducted qualitative research before I was quite nervous in the preparation for this study. Despite meeting people on a daily basis in my clinical role it felt as though I was starting afresh when it came to research. This feeling quickly dispersed as I began my first interview and found my participant open, warm and reflective. In fact, my overall experience with participants was incredibly enlightening with all those taking part giving more pieces to add to the puzzle.

Following the completion of the interviews I was keen to begin the IPA because I felt that so much good information had been provided to me by my participants, and that I wanted to do it justice in my analysis. Through conducting the IPA I feel I was able to gain a much greater understanding not only into the themes around hope, but the nature of hope itself which was invaluable in the writing up process. I believe I learnt a great deal from doing the qualitative study and feel that in the future I would have no reservations about conducting qualitative research again.

Conclusion

I am very satisfied with my doctoral project. I feel I have learnt so much in so many areas, from time management to writing up. At time the process was difficult, and caused my hope to fluctuate, but I feel that following this process I am well equipped to

go on and conduct research in the future. Reflecting on the process on the whole I can see now how things could have been done in a different and more efficient manner, but without that I would not have learnt as much as I have.